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Non-employment income (NEI), including investment income from sources such as stock dividends and transfer income from government programs such as Social Security, represents as much as Forty percent of total income in U.S. counties yet receives considerably less attention than earnings. Prior studies have used varying combinations of NEI types and geographies such as rural counties and retirement income. This research study is the first to consider all NEI types and to analyze them strictly within America's major job and population centers: metropolitan counties. 99 metropolitan counties in the Upper Great Plains (Minnesota, Iowa, the Dakotas, Kansas, Missouri, Illinois, Wisconsin, and Nebraska) were studied during the Great Recession's beginning in 2007-2008 for patterns of NEI and its sub-types. Important economic, socio-demographic and health variables were analyzed via principal component analysis regression measures to evaluate potential effects on the distribution of NEI among counties. Key variables combined into a principal component indicating sub-optimal socio-economic conditions had statistically significant impacts on lowering a county's investment income while a component with conditions that track with diversity (e.g., percentage of non-whites and renters) had statistically significant impacts on increasing a county's investment income. Further research will improve our understanding of NEI's impacts and influences in its growth or decline.

THE GEOGRAPHY OF NON-EMPLOYMENT INCOME IN THE METROPOLITAN UPPER GREAT PLAINS: DURING THE 2007-2008 RECESSION

by

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CHAPTER I

INTRODUCTION

While employment and earnings often dominate discussion about local economic growth, non-employment income (NEI) has emerged as an increasing yet overlooked share of the economy. NEI represented nearly 40% of total national income and accounted for more than $5 trillion dollars in 2010, which is a large increase from 25% of total income in 1970 (BEA, 2012). NEI includes many varying sources of income aggregated into two separate sectors. Investment income, at nearly 25% of national income, is income generated from dividends, interest, rents and capital gains (BEA, 2012). Government transfer payments, at more than 15% of national income, are generated from public sector entitlements and social safety net assistance programs.

NEI is alternately amplified and endangered by a unique confluence of demographic, economic and governance related changes including the aging population, rising share of the federal budget of transfer programs including Social Security and Medicare and the growth of capital gains in the economy (Galston, 2012; Wenzl, 2008). The large growth in America's elderly population doubles the beneficiaries of NEI retirement programs such as Social Security and Medicare (Lynch, 2011). Most prominent among this demographic shift's impacts, NEI growth will lead to government

programs being half of the $4.6 trillion healthcare industry by 2020 (Centers for Medicare Studies, 2010; Lynch, 2011). These trends and concerns about the sustainability of such mammoth growth in government has led long-term deficit reduction to become a central focus of the American political system as seen in presidential debates, congressional campaigns, and the creation of the bipartisan presidential Bowles-Simpson Commission (National Commission on Fiscal Responsibility and Reform, 2010). This commission's conclusions promise impacts that would dramatically change NEI geography. For instance, it highlighted how growth in transfer programs and the tax privileging of certain investment types contributed to the nation's historic deficit (National Commission on Fiscal Responsibility and Reform, 2010). They suggested a mix of tax and entitlement reforms meant to reduce government spending and raise revenues. Recognition of the effects of such reforms has led to belated awareness that NEI is a major contributor in local economies with probable further growth. Already, local governments have begun to weigh the impact of cuts in Medicare in much the same manner they react when a company announces significant layoffs (Craver, 2012).

Both main components of NEI, transfers and investments, are associated with different socio-demographic and economic factors. Some NEI predominates among certain groups such as the aged with Social Security and some NEI is driven by economic trends such as the Supplemental Nutrition Assistance Program. While this thesis argues the role of government policy shaping and influencing NEI is undervalued in prior research, overall, NEI variation by regional, state, city and rural economies has been found to be contingent on local conditions and influences (Campbell 2003; Debbage and

Beaver, 2012; Forward 1982, 1990). NEI's importance is under-stated since it "...can be seen as bringing 'new money' into a 'local economy...' just as exporting goods and higher wages do while certain NEI types have proven to be immune to economic downturns and other types are actually counter-cyclical in nature (Nelson, 2008, p.2150)." Wenzl (2008) incorporated capital gains into a consideration of household wealth and savings patterns that emphasized dividends, interest and rents. NEI's potential relationship with income inequalities (Austin and Schmidt, 1998; Nelson, 2007), life course migration (Nelson, 2005, 2008), natural resource dependent communities (Nelson and Beyers, 1998; Petigaraa et al., 2012) and boom and bust economic cycles (Smith and Harris, 1993) has been explored.

In addition, previous studies have examined NEI in different combinations with some including only transfers (e.g, Petigaraa et al., 2012), others including some transfers and investment income (e.g., Nelson, 2008), and a few included capital gains (e.g., Wenzl, 2008). Various geographies are studied including rural areas, entire states and even the entire country. None have yet combined investment and transfers along with capital gains with an exclusive analysis of the nation's economic and population centers: its metropolitan counties. Thus, this thesis is the first investigation that includes all types of NEI from 2007-2008 in previously unconsidered metropolitan counties in Upper Great Plains: Iowa, Minnesota, Missouri, Nebraska, Kansas, South Dakota, North Dakota and border areas of Illinois and Wisconsin. What is so special about this region comparative to others? It fit best for an analysis of metropolitan county NEI during the 2008 Recession because of the region's avoidance of the worst of the Recession's impact in

housing and employment (comparative to the Southeast and Great Lakes states), its lack of extreme wealth concentration and inequality (comparative to the Northeast) and its relative geographic proximity (comparative to the West which ranges from Washington State to New Mexico). This thesis answers the following questions:

1. What geographic patterns of NEI (e.g., investment income vs. government transfers) are apparent in the upper Great Plains region?
2. How influential is NEI in this region's economy?; and
3. What factors (e.g., socio-demographics, economic, etc.) explain the geographic variations of NEI? Very specifically, do these variations indicate related to different industrial sector patterns or shaped by the urban system such as urban, suburban, or exurban?

CHAPTER II

LITERATURE REVIEW

Despite its substantial influence in economies, comprising as much as a third or more of total income, the discussions about various types NEI have been underrepresented in the economic geography literature. Even the history of NEI is presented in limited or non-existent detail in the past work, so a more thorough review is necessary as they provide details for specific sectors, such as Medicare and capital gains, so that current and projected trends as well as the drivers of NEI change can be reported more completely.

Important Definitions

Before commencing the review, the reader would benefit from a brief overview of the following terms and programs that will repeat in our discussion of NEI:

Medicaid, often described as Medicare's 'poor second cousin', has grown into the nation's largest public health insurance program, designed and managed by states for those who were within the poverty level or close to it (Kilgore, 2013). The federal government provides more than half of the funding for Medicaid on average in exchange for states following established guidelines for eligibility, benefits and management. In addition to means-tested health insurance, it also provides long-term care assistance,

covering the costs of assisted living for the aged of minimal financial means (Smith et al., 2000).

Medicare has grown into the largest hybrid health insurance program in America, though not without great cost as coverage of its 40 million elderly enrollees aged 65 and above and 8 million more permanently disabled adults represents 15% of the federal budget, more than $500 billion in 2010 (Medicare, 2013). Medicare reports that it is partially funded by a 2.9% payroll tax on a single worker's first $200,000 or a married couple's first $250,000 in earnings and a 0.9% tax on earnings above these levels with the rest being paid by premiums and co-pays.

Social Security is a retirement insurance program providing a guaranteed benefit for enrollees starting as early as age 62. As its finances worsened due to increased participation decades after its creation, payroll taxes were raised again and again to cover the difference, a significant rise over several decades from 1% of employment income in 1935 to 6.2% by 2005 on earnings up to $113,700, a limit known as the 'cap' (Meyerson et al., 2012).

Created in 1956, Social Security Disability Insurance (SSDI) was intended as disability insurance for the working citizen (now including 130 million eligible workers) who experienced a disability that led to their 'inability to engage in a substantial gainful activity in the U.S. economy' (Autor, 2011). Now counted among the nation's fastest-growing transfer payment programs, it consists of a guaranteed income payment and medical benefits, largely funded by general tax revenues and specialized taxes.

Initiated in 1935 as part of the Social Security Act, unemployment insurance (UI) is a counter-cyclical transfer payment providing income assistance to unemployed workers, an attempt to mitigate negative effects on the economy of increased joblessness by sustaining consumer buying power (Francis, 1993). Paradoxically, Francis found its contribution to local economies is limited by eligibility rules that restrict receipt of benefits only to workers who are laid off, not those who quit or re-enter the workforce.

Dividends are the share of a company's earnings returned to investors as a return on investment for those owning stock in companies. A more consistent, if less lucrative, form of investment than capital gains, they are regularly paid out by many companies, usually in cash and dispensed in two forms that determine the amount, preferred and common. The IRS identifies preferred dividends as those dispensed on a fixed rate while common dividend rates are determined by the company's recent profits (U.S. Internal Revenue Service, 2013).

Rental income includes remaining revenues from renting out properties after accounting for maintenance and repair expenses, property taxes and mortgage interest. Factors impacting rental income include housing values, interest rates, construction costs, market rent values of agricultural lands, lands for gas and oil exploitation, properties rented out for tourism purposes and inflation levels (Mayerhauser and Reinsdorf, 2007).

Interest income on funds in savings accounts has declined in importance since the middle of the twentieth century as interest rates have declined and inflation risen (McCully, 2011). As a passive investment instrument, interest earning accounts lost

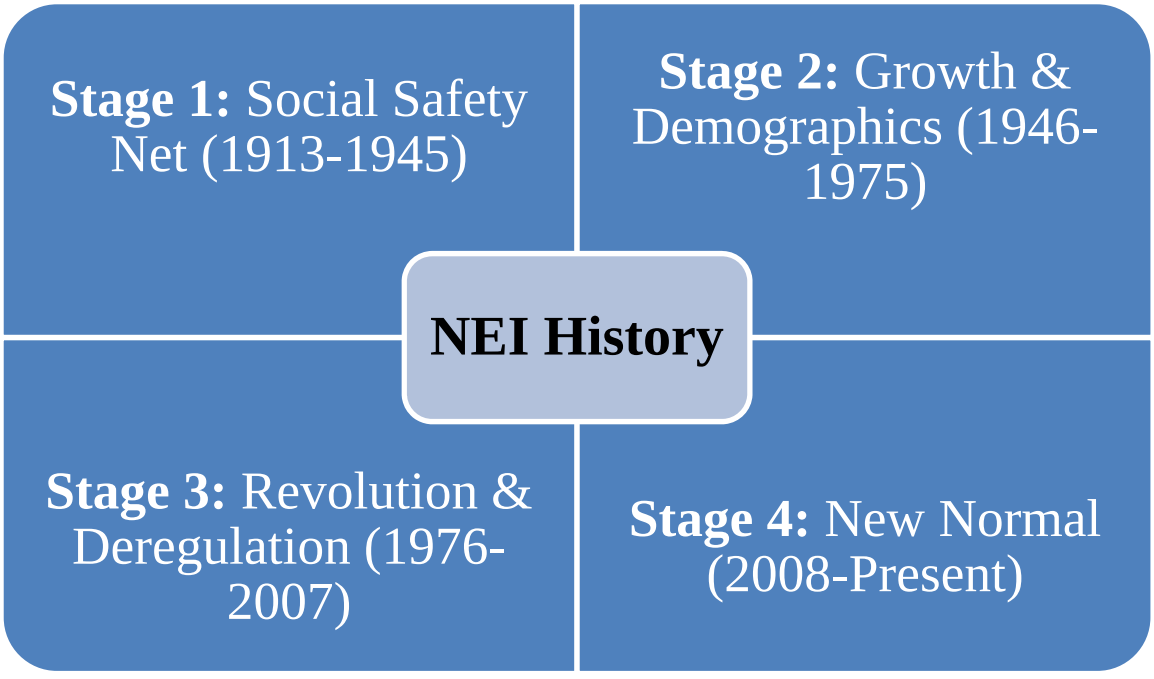
market share in the 1970's as financial deregulation took effect and allowed for more equities investment that promised higher returns, albeit with higher risk (Wenzl, 2008).

A capital gain is the gain accrued from a capital asset's sale compared to the original purchase price. Assets include real estate, stocks, bonds, and other holdings.

Geography of NEI: Four Stages of Historical Development

Overall, NEI has grown substantially within the last century and its growth unfolded in ways that can be categorized into four stages (Figure 1) (Ederbstadt, 2012).

Figure 1. Four Stages of NEI History



Stage 1: Social Safety Net (1913-1945)

The stage 1 period can be recognized from the onset of the Sixteenth Amendment in 1913 establishing the federal income tax until the federal spending drawdown of 1945 after World War II.. After President Harding achieved a landmark tax cut of capital gains rates from 73 percent to 12.5 percent in 1921, the earnings from dividends and capital gains were the highlight of NEI until the Great Depression (Barone, 2013). Government transfer payments were mostly limited to war pensioners until an 'insurgency of the aged' by 1.5 million Americans demanding a $200 pension (protests led by so-called Townsend Clubs named after a California doctor's spirited editorial) and the devastating consequences of the depression that had worsened endemic poverty among the aged laid the groundwork for the Social Security Act of 1935 (Amenta et al., 1992). This ushered in the 'American 'social safety net' or 'welfare state', creating Social Security, Aid to Families with Dependent Children (AFDC) and unemployment insurance (UI) (Social Security, 2013). By 1940, Social Security had already been expanded from an individual-centric benefit to a family-oriented one with payments for widowers and dependents of the aged recipients (King and Cecil, 2006). However, its design was intended to prevent certain groups from receiving benefits at all, such as agricultural workers, often for racial discriminations (Katznelson, 2006).

Stage 2: Growth and Distribution (1946-1975)

Since late 1940s, the rising post-war economic growth in U.S. led to further growth of NEI in both investment income through stock market capitalization and

transfer payments (Ederbstadt, 2012). Transfer payments growth continued in the 1950's with the introduction of disability insurance (DI) and accelerated in the 1960's with the loosening of eligibility requirements for existing programs and the creation of Great Society programs that expanded the social safety net, Medicaid and Medicare (Autor, 2011; Mueller et al., 2012**).**

Stage 3: Revolution (1976-2007)

The third stage of NEI growth was shaped by the financial deregulation and sector changes in the U.S. economy, which altered the landscape of investment income and capital gains (Wenzl, 2008). Consequentially, growth in household corporate equity holdings, documented by the government as capital gains reported to the IRS, resulted after the deregulation of the brokerage commissions industry had reduced the popularity of savings interest comparative to capital gains. For instance, in 1980, 23% of household assets were held in interest-accumulating traditional savings accounts that had been utilized for decades. By 2007 these traditional means of investment income accounted for only 13% of household assets. This nearly trillion-dollar change enacted by the money market accounts and mutual fund investments made possible by deregulation of financial markets emerged as preferred investment vehicles due to their higher interest rates and greater returns.

In this stage, transfer payments also enjoyed continued growth with the creation of new programs and greater use of existing retirement programs due to life expectancy improvements (Shrestha, 2006). A major new program that began as a minor tax credit in

the early 1970's, the Earned Income Tax Credit (EITC) had by the time of welfare (AFDC) reform in 1996 developed into a crucial transfer payment keeping millions of Americans out of poverty by rewarding the working poor with a significant tax credit (Cook, 2012). The success ascribed to the EITC and its pro-employment incentives was contrasted with a growing negative perception of both the AFDC program and its recipients as 'welfare queens' among the voting public. This perception of failure and bad incentives helped to make the first retrenchment of a major transfer payment program possible with bi-partisan support in 1996 for dramatically shrinking the AFDC program (Edelman, 2012).

However, this unprecedented rollback of a major transfer payment program must be seen as an aberration. It was quickly followed up in 1998 with a significant expansion via the State Children's Health Insurance Program (S-CHIP) and in 2006, an even larger entitlement, Medicare Part D, was instituted to close the cost loophole for senior citizens purchasing prescription drugs (Galston, 2012). In response to the 2008 recession, a temporary loosening of requirements for Supplemental Nutrition Assistance Program (SNAP) benefits and the extension of unemployment insurance led to unprecedented growth in income maintenance programs (Appelbaum and Gebeloff, 2012). The 2010 Patient Protection and Affordable Care Act (PPACA), extending new health insurance coverage to tens of millions of Americans, thus represents merely the latest chapter in 75 years of transfer payment expansion, a remarkable series of outcomes resulting from often-titanic political struggles, advocacy campaigns and fierce public debate (Galston, 2012).

Stage 4: New Normal (2008-Present)

Changes such as the 1996 tax exemption and the demographic change highlighted by the massive baby boomer cohort are what help comprise Stage 4. Demographic growth stems from the enormous 'Baby Boomer' (1946-1964) generation accessing retirement programs, with 10,000 turning 65 every day. Also, tens of millions of Americans are becoming eligible for health care insurance under the PPACA's Medicaid expansion (Kenney et al., 2013). Policy changes from Congressional legislation have broadened beneficiary bases and legislation imposing preferential tax treatment of capital gains and dividends encouraged greater investment activity, especially in local communities (Ivkovic and Weisbenner, 2005).

The results of this growth through the four stages are nothing short of staggering. CBO director Douglas Elmendorf has observed that in 40 years, defense spending and transfer payments (at least the three largest programs, Social Security, Medicare and Medicaid) have respectively exchanged their shares of GDP (Leonhardt, 2013). Essentially, 8.2% of GDP is spent on transfer payments and only 3.9% is spent on defense now, whereas back in 1970 only 3.8% of GDP was spent on transfer payments and 8.1% was spent on defense.

The Importance of Place

What else is apparent about NEI from the available literature? Place is a common determinant of NEI concentration and distinct patterns have been identified with both investment income and transfer payments, due to varying geographies in studies. These

geographies include every American county, rural counties, counties in specific states or regions, Canadian cities and rural Canadian areas. NEI is often situated within models exploring its economic base effect or its employment multiplier (Kendall and Pigozzi, 1994). It has also been explored alongside socio-economic markers of healthy or sluggish economic and population growth (Forward 1990; Debbage and Beaver, 2012). Finally, it has been especially explored for its links with or as retirement or near-retirement migration indicators (Nelson, 2005; Nelson, 2008).

NEI Geography at National Level

Nationwide across America, economically depressed Appalachia, popular retirement areas in Florida and areas in the Great Plains where farmland leasing was common were found to have high NEI concentrations in the 1980's (Groop and Mansoon, 1990). Distinct differences between the two types were observed: a negative relationship existed between high per-capita income and transfer payment income and a strong link was evident for investment income and rural farm populations.

NEI Geography at Statewide Level

Adopting a wider focus, in the first state-wide study of non-basic income, a temporal study of Michigan counties from 1959 to 1986 considered economic base impacts of NEI (Kendall and Pigozzi, 1994). This study observed high concentrations of both types of NEI within Michigan's mostly rural northern half. However, the regression analysis found NEI had a more significant effect in metropolitan and non-metropolitan

areas than rural areas, especially investment income, though investment income held more influence in rural counties than transfer payment income.

In another statewide study with an economic base model, NEI's effects on job growth in North Carolina counties from 1969-1994 were gauged (Campbell 2003). Contrary to Nelson and Beyers (1998), investment income concentration was linked to N.C. counties having higher employment growth than counterparts with a disproportionate share of transfer payments (Campbell, 2003). More apparent than in prior studies (Manson and Groop, 1990; Kendall and Pigozzi, 1994), Campbell (2003) found metropolitan areas tended to have less NEI relative to their non-metropolitan counterparts, a likely consequence of the state's distinct geography of high natural amenity and popular retirement destination regions on the coast and in the mountains. In Campbell's study, adjacent counties with similar age profiles of disproportionate aged residents also had divergent experiences based on their greater reliance on investment or transfer payment income. This was attributed to the success of a few counties in attracting higher-income retiree migrants. It is unclear from the literature whether metropolitan counties with similar demographic or economic profiles would feature a similar effect based on their (in)ability to attract better-educated workers, a key demographic associated with higher levels of investment income in the Piedmont Megapolitan region in 2009 (Debbage and Beaver, 2012).

NEI at Metropolitan Geography

Two studies of Canadian cities over a near-decade outlined a distinct urban pattern of NEI variation (Forward, 1982;1990). He categorized cities by common labor force and economic characteristics. Heartland cities, those with greater manufacturing employment and those with tertiary sector employment levels were deemed to have more balanced ratios of the two NEI types. Hinterland cities and those with more primary sector employment levels were found to have less balanced NEI ratios. Later, Forward (1990) observed significant urban hierarchy differences amid continued NEI growth. The largest cities, especially those with much greater levels of FIRE employment, were among the highest for investment income. These larger cities trended toward more divergence from others with this concentration of investment income. Conversely, smaller cities trended toward higher levels of transfer payment income. Two caveats apply in relating this research to others. The researcher explained that family allowance benefits, a common transfer payment type in America, were minuscule in Canada. Also, unlike American formulations from the BEA, capital gains were recognized and incorporated as investment income.

The urban-core predilection for investment income was affirmed in a study of the relationship between transfer payments and investment income through the prism of 'megapolitan' geography (Debbage and Beaver, 2012), a concept developed by Nelson and Lang (2007). The megapolitan geography studied was the Piedmont Megapolitan, a 120-county region of 15 million people containing both metropolitan and rural areas. In

the analysis by Debbage and Beaver (2012), a strong core-periphery relationship was observed wherein metropolitan core counties were considerably more reliant on investment income for NEI comparative to their smaller and more rural counterparts in 2009. Large metropolitan counties with greater earnings bases and skilled workforces had smaller shares of NEI while counties in more rural areas had far larger shares of NEI. However, a key limitation of the megapolitan region geography for NEI is that it can exclude high-amenity and natural-resource rich rural counties that have significant investment income from retirees, such as coastal counties in North and South Carolina.

Micropolitan Geography

Considering the new geography that is between metropolitan and non-metropolitan known as micropolitan areas, Mulligan and Vias (2006) included transfer and investment income as variables in analyzing industry employment's relationships with demographic, economic and geographic conditions in those areas They observed that the two NEI types balanced each other out over their two-decade steady time frame. Transfer payments were found to stifle change in employment and population growth or were associated with their decline while investment income encouraged growth in employment and population.

NEI at Non-metropolitan Geography

Surveying NEI growth in non-metropolitan Nevada counties, those with greater NEI concentrations were identified as being less prone to boom and bust economic cycles, enjoying more economic stability than their metropolitan counterparts (Smith and

Harris, 1993). In this study, the NEI dependency of these rural counties was in part driven by their faster growth in elderly population shares than metropolitan counties. It also found greater concentration of NEI resulted in reduced general growth differences and less total income fluctuation between non-metropolitan and metropolitan counties, driven in part by the higher growth of investment income. Later, within the 'New West' of rural Rocky Mountain region counties, NEI was observed to increase more than earnings income from 1985-1993 (Nelson and Beyers, 1998). Rural counties in the 'New West' having greater NEI concentrations were confirmed to have greater population growth, though no significant relationship was found between employment growth and investment income.

NEI and Migration Geography

The first impression that NEI was considered footloose was in 1990, though with the caveat that a significant proportion of people with NEI had less potential for out-migration given lower or fixed income profiles (Groop and Mansoon, 1990). In follow-up research adding more detail to the question of NEI's relationship with migration, out-migration of NEI down the urban hierarchy was observed in the 1990s (Mansoon and Groop, 2000). Problematically, Social Security income was isolated from other transfer payment income in this study. Thus insight into transfer payment income was less complete, though Social Security income was found to not concentrate or migrate as strongly as investment income.

However, utilizing more details and a longer time frame than the prior study, non-metropolitan sectors across the country showed positive NEI gains in an analysis of NEI migration from 1995 to 2000 (Nelson, 2005). While this NEI shift followed the decades-long Rustbelt to Sunbelt population migration, demographic change and the migration habits of retirees and near-retirees offered a needed infusion of such income for even non-metropolitan counties in the Rustbelt. Further, the study found regional variances abounded as the Great Plains region had an influx of migrants with relatively low per capita NEI and New England and the Rocky Mountain regions drew more individuals with high per capita income, especially investment income.

More closely considering regional NEI migration and its differences among metropolitan and non-metropolitan areas, the same researcher then adopted life-course modeling to explore age-specific patterns of migration and NEI with Public Use Microsample data (PUMA) (Nelson, 2008). Now quality of life traits and household structure were determined to be more accountable for NEI migration than economic characteristics. The results also suggested, as Kendall and Pigazzi (1994) had, that there was a strong imperative for states to foster regional development strategies that incentivized their near-retirees and retirees to not emigrate. The study's results suggested how, for instance, West Virginia's Social Security taxes may have had an adverse impact on retaining and attracting people over age 55.

Government Programs and NEI Geography

Beyond geographic variation of analytical focus, program or type specific geographic variances and how they were shaped by policy decisions were largely overlooked in studies considering NEI, barring brief mention of income support programs, agricultural rents or Social Security. For instance, considering its widespread payment disparity, driven in part by varying levels of healthcare inflation across the country, Medicare's geography is a significant contributor to NEI variation and is a direct consequence of Congressional policy (Super, 2003). This study traced how a twenty-year Congressional struggle to reign in uneven costs led to the use of prospective payment systems, setting national baselines for costs using geographic wage and practice cost indexes while covering most services such as rehabilitation, home health agencies and long-term-care hospitals. Unfortunately, the practice cost index itself was based on an esoteric geographic agglomeration that did not follow the MSA model and was widely considered to be inaccurate and inefficient. This practice of not reflecting accurate cost differentials was most egregious within the MSAs themselves such as between urban, wealthy Forsyth County, GA and more rural, less-developed counties in its MSA (Institute of Medicine, 2011).

Uneven supply-side geography patterns are another notable issue for metropolitan counties and Medicare, as residence in these counties has often entailed access to and receipt of more and expanded services due to the agglomeration effects in metropolitan area health services, especially for supply-sensitive services (Wennberg, 2002). Contentious debate about whether the driver of increased service use is related to greater

supply availability of services, the health of patients, prevailing physician practices, the size of the elderly population, or even new and more expensive medical technologies in a given MSA remains ongoing (Cutler and Sheiner, 1999; Cutler and McClellan, 2001; Super, 2003). Cutler's findings in particular suggest the viability of health status of the elderly population as a significant element in driving geographic variation, but there are complicating factors regarding service quality and availability.

Medicaid is another program with significant geographic variation. Since on average nearly half of Medicaid funding originates with states (and occasionally counties), spending variance among them is widespread and even shifts over time based on changing legislative standards of health coverage and eligibility (Kenney et al., 2013). This analysis of Medicaid coverage also observes that if a person qualifies in one state, they may not qualify in another, since a state's spending can be minimal as in Mississippi or more generous as in Massachusetts, where adult dental care is also covered rather than only for children, the latter a federal requirement. Other factors, especially economic and socio-demographic conditions, can significantly vary the need for Medicaid. Prominent among them is long-term care, which nearly constitutes one-third of Medicaid budgets in states (Galston, 2012). Variance among states in long-term care matters because the cost of spending on children and the non-disabled averages under $3,000 per year but more than $13,000 for the elderly and disabled (Smith, 2012). The same study also highlighted how the cost of health care itself varies among states significantly, with costs observed as considerably higher in the Northeast compared to the Mountain West.

SSDI also boasts significant variation in its geography. Earlier research observed higher rates of DI in high-poverty regions including portions of Appalachia, the Missouri "Boot Heel", and other areas and lower rates in many counties in the Western and Midwest states, including several in the study area such as Kansas, Nebraska and the Dakotas (McCoy et al., 1994). Employment in higher-risk industry sectors as well as the migration patterns of certain groups (especially the aged and the young) were two factors linked to its distribution. In 2011, amid expanding disability standards and a worsening job market, SSDI was noted as a predominantly rural phenomenon with rates of disability payouts in 2009 80% higher in rural counties compared to their urban counterparts (Bishop and Gallardo, 2011). While confirming the geographic patterns outlined earlier (McCoy, Davis and Hudson, 1994), this study did find below-average disability rates were accounted for in much of our regional study area, especially Southern Minnesota and the Dakotas.

For investment income, the geography of capital gains is a primary source of variation, as are dividends (Wenzl, 2008). This first analysis of capital gains geography observed areas that are swiftly growing, high-amenity or have significant technology and services employment sectors tended to have higher portions of capital gains than other areas. Manufacturing dependent areas in particular tended to have lower shares of capital gains.

Demographic Traits of NEI Geography

Past studies utilized key variables that are important to any study of NEI. These include employment sector concentrations and growth, workforce participation, educational attainment and family composition (e.g., Campbell, 2003; Nelson, 2008; Debbage and Beaver, 2012). However, recent trends in NEI suggest variables to include in our models and inform our analysis of the results.

Both investment income and transfer payments have evolved significantly in the long-term. Investment income has become a capital gains and dividend driven category, especially with employment-related retirement funding shifting from defined benefit to defined contribution plans resulting in millions more Americans participating in financial market activity and accumulating investment income (Broadbent et al., 2006). With interest rates on savings accounts at record lows and tax code changes reducing the profit from rent speculation, this trend has been in place for more than a decade and has its share of drawbacks, among them increased income inequality and the problem of limited financial literacy among investors (Rosenberg, 2011). Recent evaluation of financial literacy across the country determined low levels in general but significant geographic variation by state, with lower levels linked to poverty rates at the state level (Bumcroft et al., 2011).This suggests the importance of poverty-linked variables for not only transfer payment income but investment income as well.

Among transfer payment programs, most have evolved beyond their original intentions as elements of a social safety net to protect people from abject poverty and

arguably become more directed to upholding the middle class (CBO, 2011). This study makes this apparent in the shift of transfer program benefits from going to 54 percent of the bottom fifth (in income) of households to just 36 percent in 2007. Another view of this posits that these transfer payment programs are still achieving their goals of protecting people from poverty as seen by their impact on the elderly, working families and the disabled, groups that often have been disadvantaged in society. Among the six largest transfer payment programs in 2010, 91% of transfer payments were received by these three groups (Sherman et al., 2012).

These programs have had real impact in shielding the elderly in particular from chronic income instability and providing them with a level of living standards higher than they otherwise would have on their own. The elderly have been less vulnerable in modern recessions for a variety of reasons, including their guaranteed transfer payment income, a resilience that saw them lose only 13% of their net worth from 2005-2010 which the Census Bureau described as entailing the smallest decrease of any age cohort (U.S. Census, 2012). Their rising share of Medicaid expenditures for long-term care and Medicare's overall growth indicates elderly-linked variables are more important in a model of transfer payments than in past research (Gleckman, 2009; Galston, 2012). Finally, a recent review of SSDI and Medicare outlays indicate public health indicators such as diabetes, obesity and poor health status are important contributors to individuals being unable to work, ill a disproportionate amount of time and more likely to seek government support via these programs (Autor, 2011).

Contributions of This Thesis

From the literature, two significant lesser-explored areas stand out. First, despite the far-greater shares of economic activity and population of metropolitan areas (U.S. Census, 2013), rural areas have received more attention for NEI geography (e.g., Smith and Harris 1993; Nelson and Beyers, 1998; Nelson, 2005). Rural development concerns and the growing acceptance of NEI as a part of economic base models spurred this interest for examining NEI's economic impact for areas with smaller earnings bases (Manson and Groop, 1990). Studies that incorporated metropolitan and rural geographies alike have mixed results. However, this result has more to do with research methodology limitations, research emphasis, and temporal elements such as the validity of its current economy. To date, though only a few studies including Forward's older analysis on Canadian cities (Forward, 1982, 1990) and Wenzl's (2008) work on have emphasized U.S. metropolitan areas, all NEI types were not included in in those studies. Therefore, given much larger share of economies and populations, metropolitan counties deserve attention as newer data becomes available.

The second less significant explored area of NEI are capital gains themselves along with private pensions and annuities, despite hundreds of billions of dollars in recent years comprising from these areas (Wenzl, 2008). Forward (1982:1990) and Wenzl (2008) were the only researchers who incorporated capital gains and private pensions and annuities, though with limitations of their own. Forward (1990) studies of Canadian cities are twenty-years old and Wenzl (2008) did not include all transfer payments and

emphasized household wealth and consumption patterns rather than NEI itself. Therefore, the absence of inclusion of capital gains and private pensions and annuities with other investment income prevents a more complete picture of NEI geography or recognition of its importance to local economies. This thesis intends to address those two key areas of concern by using metropolitan counties of upper great plain and including IRS data.

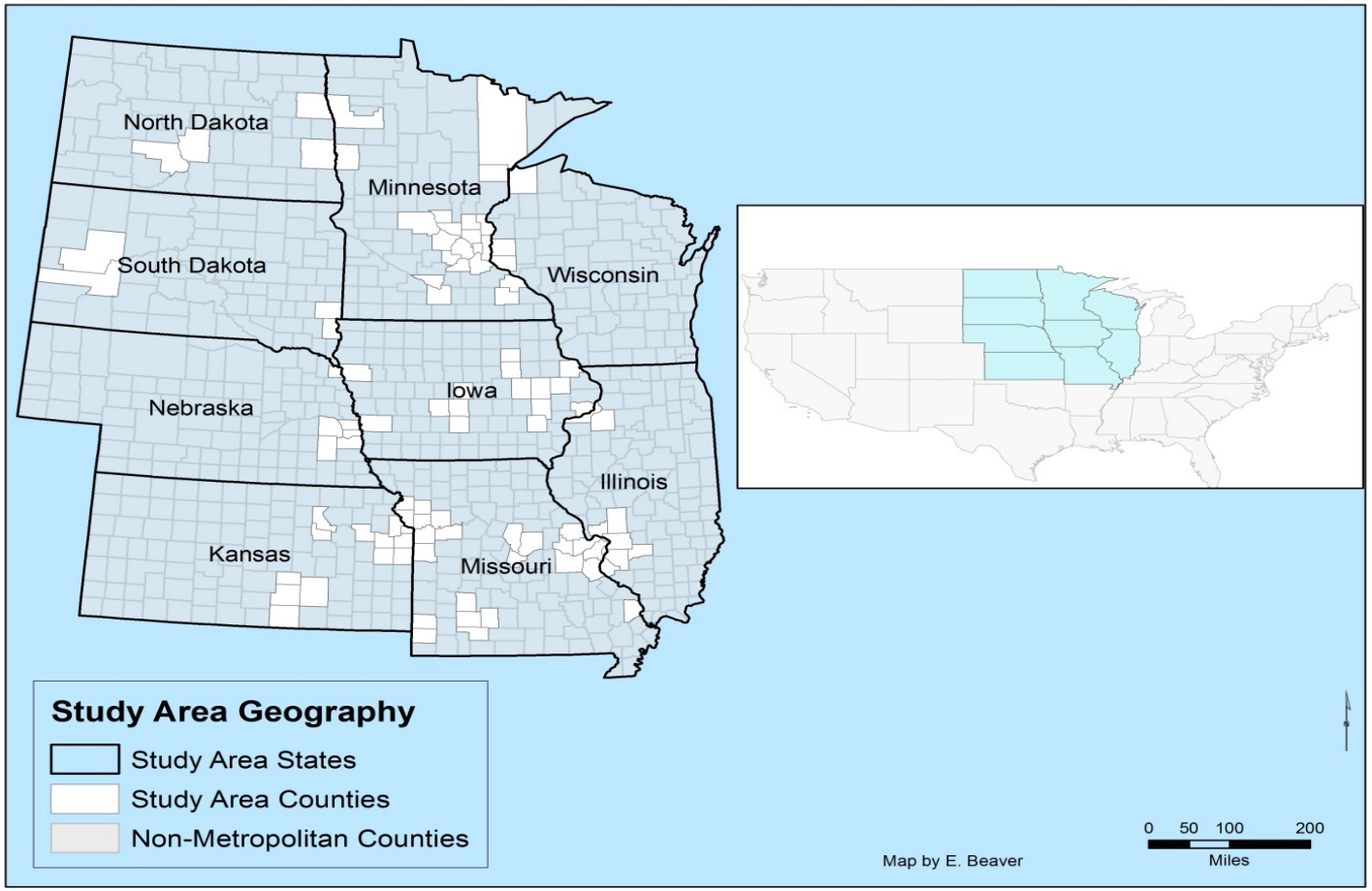
CHAPTER III

STUDY AREA, RESEARCH DESIGN, AND DATA

Study Area, Research Design, and Data

Metropolitan counties were selected for this study because of their under-representation in the literature. Unlike rural counties, metropolitan counties have available data for all variables and NEI types. Metropolitan counties include all counties within a metropolitan statistical area as defined by the Office of Management and Budget. The Upper Great Plains (UGP) region, formally classified by the U.S. Census as the West North Central Census sub-region, encompasses seven states: Iowa, Minnesota, Missouri, Nebraska, Kansas, South Dakota, North Dakota (Figure 2). However, McDonald County in Missouri had to be excluded because of significant missing data on industrial composition. These metropolitan counties have diverse levels of population, age distribution, economic outlook, and urban hierarchy, grounds for pursuing an effective empirical analysis of NEI's impacts (Wenzl, 2008; Debbage and Beaver, 2012). Metropolitan counties in Wisconsin and Illinois that were within metropolitan statistical areas in the UGP were included due to their geographic proximity, for a total encompassing 99 counties and 14.5 million people.

Figure 2. Study Area Counties

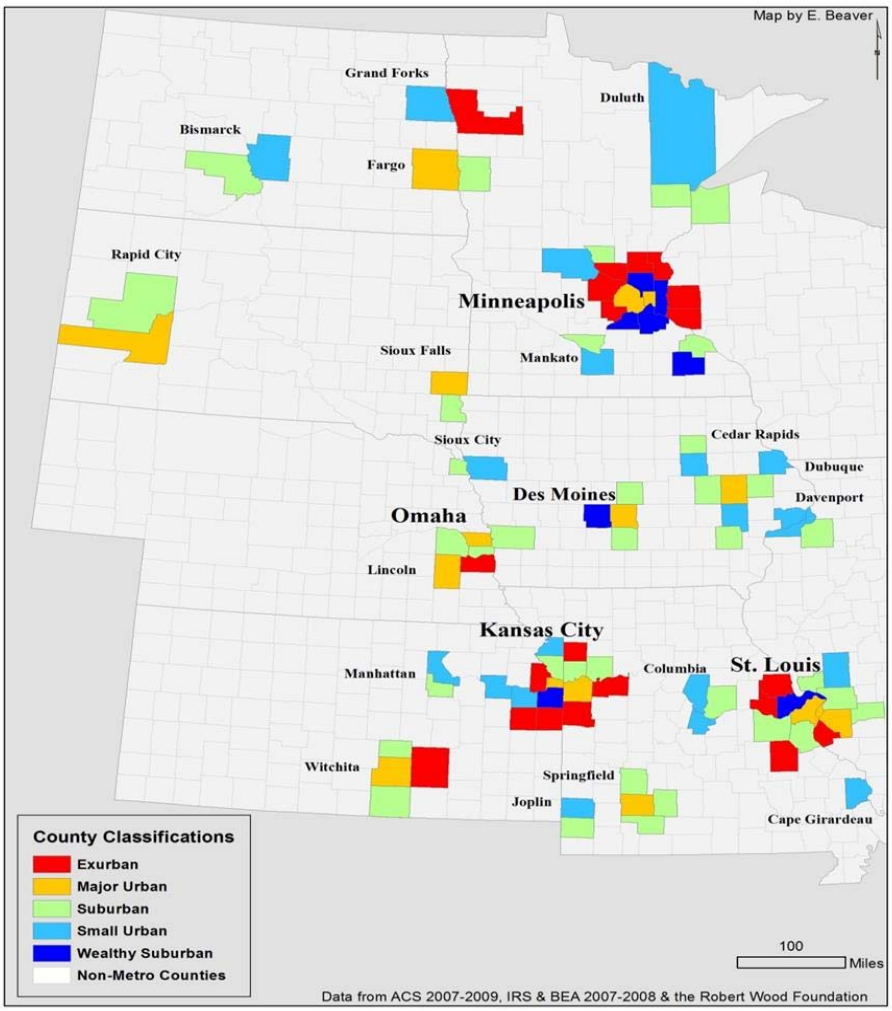


While all counties were classified as metropolitan, within the counties, there are a number of sub-classifications that can provide a more nuanced understanding of spatial patterns and results by delineating population and economic differences in particular. These include suburban, wealthy suburban, major urban center, small urban center and exurban counties (Figure 3). Exurban counties were chosen based on the definition provided by Berube et al., (2006) of communities on the urban fringe with low housing density, relatively high population growth and at least 20 percent of workers commuting to urbanized area jobs. Major urban counties were central counties of a metropolitan statistical area with a population above 100,000 and smaller urban counties were those central counties below 100,000. Further, since several suburban counties ranked wealthiest in the country on a per-capita income basis, any of those wealthy counties in my study area were treated as wealthy suburban counties (Melnik, 2012).

Data were collected at the county level for the 99 counties of the study area with the exception of IRS data, which are only available at a zip code or state geography. This IRS zip code data were matched with the zip codes of counties and then were aggregated into the county level using formulations in Microsoft Excel and ARCGIS. Data for the rest of the NEI research were available from the BEA for 2007-2008, separated into categories of investment income and transfer payments. However, since the BEA only recognizes capital gains from dividends, private pensions and capital gains data were collected from the IRS. The IRS data for the 2008 fiscal year was freely available in the research time frame, but 2007 data had to be purchased at great expense. 2009 data were still unavailable at the time the research was conducted. Hence this thesis considers only

2007-2008 NEI data to match with socio-demographic data that were collected from the American Community Survey (ACS) 2009, which are three year estimates of 2007-2009 data.

Figure 3. County Classifications



Socio-demographic, employment sector and economic status data were collected from the U.S. Census Bureau's American Community Survey (ACS) three year estimates for 2007-2009. Three-year estimates are more reliable than one year estimates, which also are only available for geographies with 65,000 residents or more, a limitation that would have excluded nearly a third of the counties in the study area. Public health data, including measures of diabetes and premature death, were collected from the County Health Rankings and Roadmaps program, a joint project from the Robert Wood Johnson Foundation and University of Wisconsin Population Health Institute evaluating the health of U.S. counties (RWJF, 2013). Including public health variables was a novel contribution to NEI study considering poor health influences NEI spending, especially transfers, in both reduced Medicare expenses and increased disability payouts.

With this study's integration of two varying accounts of personal income from the IRS and BEA, the differences between the personal income (PI) metric utilized by the BEA and the Adjusted Gross Income (AGI) used by the IRS merit explanation. These are distinctions helpfully marked by the BEA's own research and a dissertation incorporating AGI data for household wealth and consumption (Ledbetter 2007; Wenzl 2008). The BEA's PI metric results in a larger income amount than AGI, resulting in what it calls an 'AGI gap', as it includes more categories and types of income (Ledbetter, 2007). The key distinction between PI and AGI is that AGI only includes taxable income whereas PI includes those and non-taxable transfers alike. This is another instance of the BEA investment income being incomplete since the BEA neither includes pension income nor

capital gains for its investment income totals. Yet these are routine data collected from tax returns by the IRS to account for AGI.

The BEA has declined to include capital gains in its personal income accounting for several reasons. Primarily, the BEA evaluates capital gains as unstable income amounts year by year due to tax code and market fluctuations (Ledbetter, 2007). The BEA has also found that changing definitions of tax coverage and eligibility further contribute to the uncertain status of capital gains on a yearly basis. Finally, the BEA's PI is intended to measure national production and income, so they do not regard asset price changes related to capital gains or losses as viable for inclusion (BEA, 2007).

Another major exclusion from the BEA is taxable, private pensions. The BEA changed its definition of personal income in 1999, resulting in private pensions (once accounted for in part as investment income) being treated the same as public pensions, counted as earned income from employer contributions and not as investment income when received (Lenze, 2008). This study found that, overall, the BEA counts the pensions not when they are received by retirees, who will spend those pension amounts, but when the pensions are earned by workers in employment. This creates a temporal-geography problem where pension funds are often earned in one geographic location and then spent decades later in another location, but the BEA is only accounting for the former, not the latter (Wenzl, 2008).

These changes and exclusions by the BEA amount to an incomplete picture of NEI, my study can correct for the NEI amount by using the IRS AGI data. The AGI amounts were added to the PI totals and the PI's sub-type of investment income in

particular for an alternative NEI measure that provides a more thorough depiction of NEI in our study area.

Methodology

Before any analysis could occur, the AGI data from IRS had to be combined with PI data collected from BEA, a process following in the footsteps of research on NEI that emphasized household savings and consumption patterns over NEI geography and impact (Wenzl, 2008). The IRS zip code data table was merged with a table that had county FIPS codes and population percentages, so that the relevant zip codes for counties can be aggregated. Therefore, the IRS zip code results for investment income were matched with corresponding counties they were located in and aggregated by county using ArcGIS and Microsoft Excel.

There was an issue with this aggregation process as ten percent of the zip codes crossed county lines and thus included results from two or more counties. So, it was necessary to find a way to account for multiple county results. Moreover, zip codes that shared two or more counties (e.g., 27263 in Guilford and Randolph counties in NC) did not have population data within exact geographic boundaries. To approximate the population shares of zip codes by county, Zip Code Tabulation Areas (ZCTA) from the US Census Bureau for 2000 were utilized to quantify differences in population among multi-county zip codes. This method resulted in a county with 76% of the population of a zip code being assigned 76% of investment income and the other county being assigned 24%. With the IRS data now totaled by county, it was joined with BEA data for 2007 and 2008 in the overall Personal Income total and within the investment income totals. The

BEA data was downloaded, filtered and categorized, all at the county level. Once joined with the IRS data, percentages for investment income and transfers were calculated for each county.

The other methodological limitation of the IRS data regarded zip code privacy. To protect the anonymity of taxpayers, the IRS only releases zip code tax datasets that contain 250 tax returns or more per zip code. For instance, a zip code for a wealthy neighborhood in San Diego, CA with five acre lots and only a few dozen families living within its zip code boundary was thus not included.

With the NEI variables prepared for analysis, potentially explanatory variables were next selected. Socio-economic, employment, housing and demographic variables were obtained from the U.S. Census Bureau ACS website at the county level and merged in Microsoft Excel with three health variables that were acquired from the Robert Wood Johnson Foundation's Countyhealthrankings.org website. All variables were expressed as percentages where possible, with the exception of Median Home Value. Once all variables and NEI data was collected, a spreadsheet was created for use in exploratory data exercises and analysis with SPSS, especially with principle component analysis.

Before moving forward with the analysis, two policy concerns informed potential or known issues with the data sets collected. Concern about the substantially higher rate of healthcare price inflation did and should continue to temper conclusions about the transfer payment totals from Medicare and public assistance medical care programs (Skinner, 2001). Healthcare benefits constitute 'in-kind' benefits, cash transfers from the government to service providers and not to households, though such benefits do free up

monies otherwise directed towards those expenses. Yet, they also represent, even at inflated levels, real monies transferred into a local economy that have significant impact on job creation and economic activity by funding hospitals, clinics, and other facilities. Finally, no delineation of investment income into separate categories exists with the BEA data at the county level, so there is still no opportunity to analyze differences among investment income categories for counties with BEA data. However, transfer payments data is available in sub-categories such as Medicare, Social Security and unemployment insurance from the BEA.

Figure 4. Research Method: Data collection and procedure

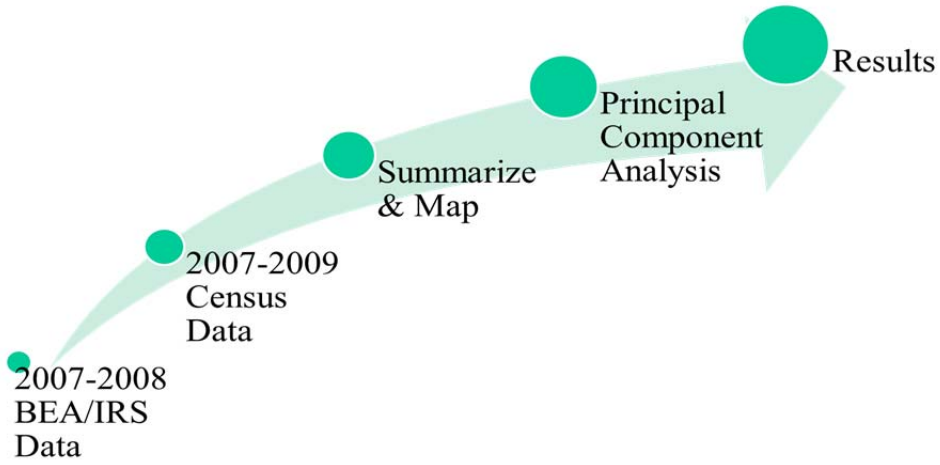


Table 1. Independent Variables

Single Parent Household	% Non-Caucasian	% Elderly
Median Home Value	% Services Employment	% Construction Employment
% Uninsured	% Low Birth Weight	% Office Employment
% Production/Transportation Employment	% Management/Professional Employment	% Employment Growth 2000-2007/2008
% Movers 1 Year Before	% Poverty	% Workforce Participation
% Bachelor Degree	% Unemployment	% Rental Housing
%High School Dropout	% Married	% Diabetes
% Population Growth 2000-2007/2008		

A total of twenty-two variables were chosen for potential linkages with NEI based on findings within the literature and analysis of recent trends driving transfer growth (Table 1). Principal component analysis (PCA) was utilized to address multi-collinearity concerns with variables. Variables selected for PCA included those related to educational attainment and poverty status, with the goal being that 15 of the variables were reduced to 5 via PCA. Achievement of this reduction allows for cleaner regression modeling of transfer and investment income impacts and relationships.

CHAPTER IV

RESULTS

The Geographic Patterns of NEI in Upper Great Plains

Figure 5 shows spatial distribution of NEI in Upper Great Plains by distinguishing its shares in three tiers: the above average (more than one standard deviation above the mean), average (from one standard deviation below mean to one standard deviation above) and below average (more than one standard deviation below mean). The distribution of NEI revealed significant geographic patterns in the study region (Figure 5) including most counties having both higher than median investment (> 22.1%) and transfer income (> 14.1%) (Figure 5; Appendix A).

Among counties in the upper tier of NEI, more than half were major or small urban core counties, including St. Louis city (MO), St. Louis, MN (Duluth), and Greene, MO (Springfield). All but one of the counties in the below average tier of NEI percentages (Polk, IA) were suburban or exurban. Surprisingly considering early assumptions that wealthy counties would have high levels of investment income, several among this below average group included the wealthiest counties in the country from the Minneapolis suburbs including Carver, Wright, Anoka, Dakota, and Sherburne and one wealthy county each from Kansas City (St. Charles, MO) and Des Moines (Dallas, IA) (Table 2).

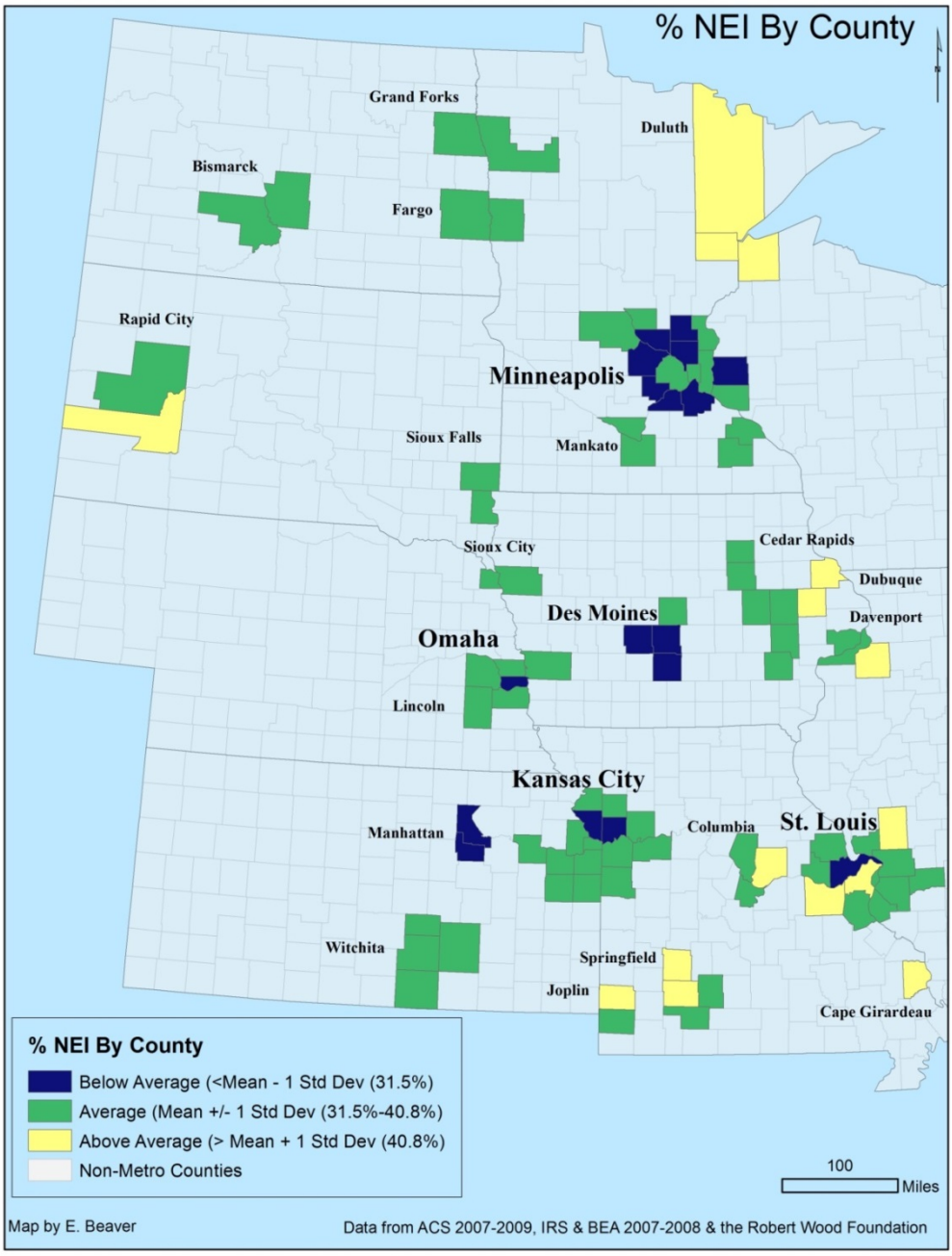
Nearly half of the counties in this below average tier could be classified as larger suburban counties with populations above 100,000 (Scott, MN; Sarpy, NE; Wright, MN; St. Charles, MO; Polk IA; and Anoka, MN). Most had below average percentages of transfers (< 14.1%) and investment income (< 22.2%) alike (Table 4.1, 4.2).

Table 2. Counties with Highest and Lowest Percentage of NEI Income

Highest NEI % Counties		**Lowest NEI % Counties**	
Polk , MO	48.11%	Riley , KS	25.98%
Macoupin , IL	45.82%	Scott , MN	26.65%
Carlton , MN	44.82%	Sarpy , NE	27.40%
Jasper , MO	43.78%	Geary , KS	27.69%
St. Louis , MN	43.75%	Carver , MN	27.89%
Douglas , WI	43.60%	Warren , IA	28.98%
Pennington , SD	43.32%	Platte , MO	29.01%
Callaway , MO	43.27%	St. Croix , WI	29.68%
Washington , MO	42.75%	Wright , MN	29.81%
Greene , MO	42.72%	Dallas , IA	30.00%
Dubuque , IA	42.55%	Sherburne , MN	30.02%
Jones , IA	42.46%	St. Charles , MO	30.20%
Cape Girardeau , MO	41.92%	Dakota , MN	30.48%
St. Louis , MO	41.65%	Isanti , MN	30.55%
Henry , IL	41.32%	Clay , MO	30.63%
Franklin , MO	40.83%	Polk , IA	31.24%
Blue Earth , MN	40.43%	Anoka , MN	31.27%
Shawnee , KS	40.34%	Jefferson , MO	31.51%
Rock Island , IL	40.32%	Pottawattamie , IA	31.82%
Polk , MN	40.24%	Sumner , KS	32.36%

Sources: BEA 2007-2008, IRS 2007-2008

Figure 5. Percentage NEI by County



IRS Income Effects

Before discussing the geography of transfer or investment income, discussion of the impact of this study's novel inclusion of capital gains and private pension data from the IRS is warranted given it increased investment income totals substantially. Investigating the difference between BEA accounts of investment income and the complete IRS account of investment income led to important realizations. Billions of dollars in investment income went unaccounted for. This resulted from the BEA's standard definition of investment income that excludes capital gains and private pensions. When comparing the two accounts, the median positive change between the BEA's limited investment income total and the more complete IRS total was a gain of 36.6% in total investment income.

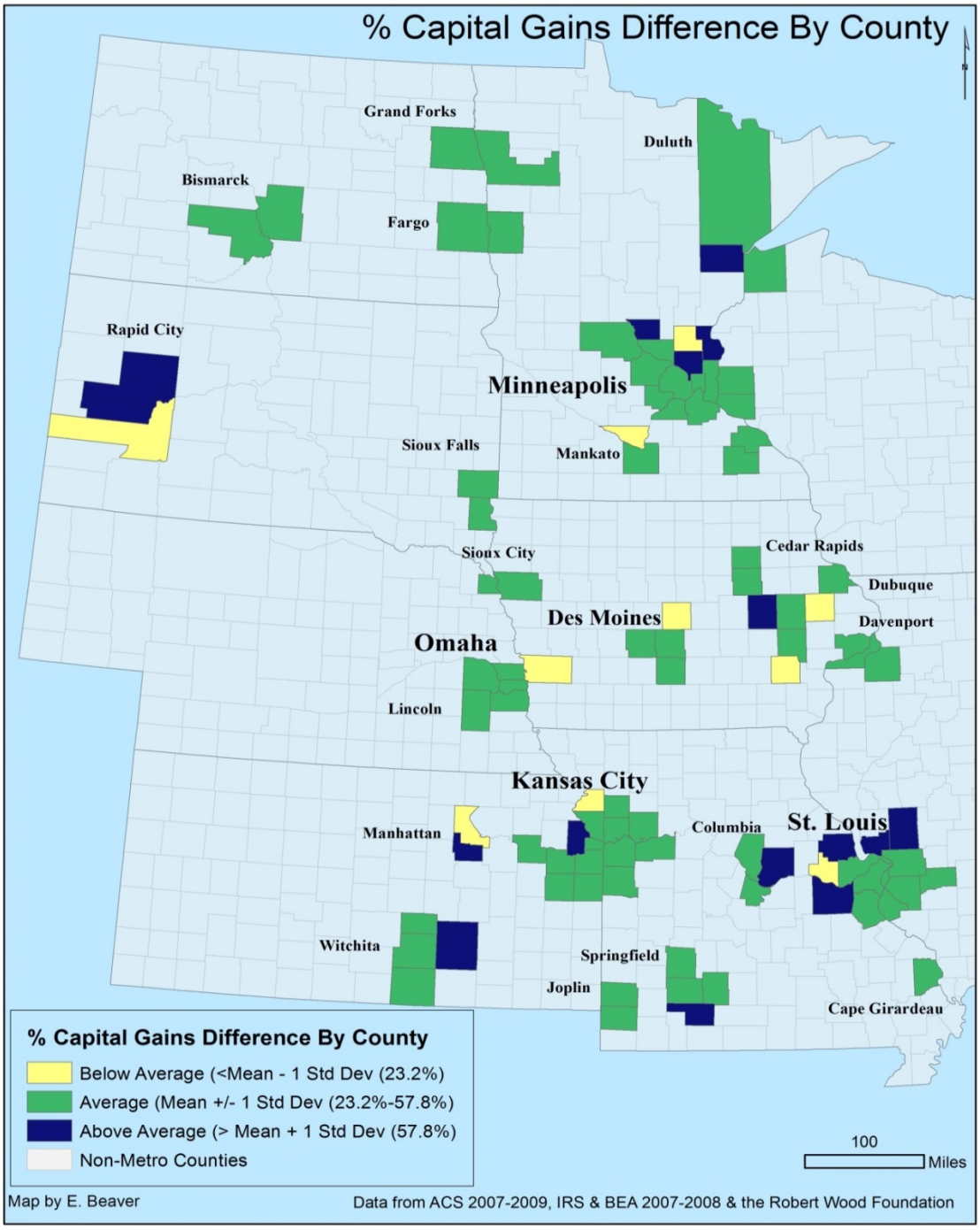
Significant geographic variation of this change was evident. Mostly suburban and exurban counties comprised the above average tier of gainers, with only a few urban core counties and only one wealthy suburban county represented among the above average tier (Figure 6). Considered as a percentage of total income, incorporating this IRS SOI data represented ten percent or more of the total income of eight counties in the study area, a massive amount of money overlooked by the BEA *(*Table 3*)*.

Table 3. Percentage Investment Income Increase from Including Capital Gains

Highest Gain From IRS Counties	
Callaway , MO	99.31%
Lincoln , MO	90.89%
Christian , MO	84.40%
Macoupin , IL	81.62%
Benton , IA	76.18%
Meade , SD	76.16%
Franklin , MO	75.40%
Anoka , MN	69.69%
Jersey , IL	69.63%
Butler , KS	67.77%
Leavenworth , KS	62.86%
Geary , KS	61.22%
Carlton , MN	61.05%
Chisago , MN	59.89%
Benton , MN	58.07%
Lincoln , SD	57.32%
Douglas , WI	56.67%
Cass , MO	54.67%
Jefferson , MO	52.95%
Clay , MO	52.13%

Sources: BEA 2007-2008, IRS 2007-2008

Figure 6. Percentage Investment Income Increase from Including Capital Gains



Transfer Income

The counties with below mean proportions of transfers shared two primary features. Most had below mean percentages of elderly populations (< 14.9%) and higher than mean workforce participation percentages (> 70.1%) (Appendix C). These results make intuitive sense because the two primary beneficiaries of transfers are the elderly and those unable to work due to disability, layoffs, and other conditions. The low-transfer tier featured a mix of large urban core counties including Hennepin (Minneapolis) and St. Louis (St. Louis) joined by wealthy suburban counties such as Lincoln (Sioux Falls) and Johnson, KS (Kansas City) and exurban counties including St. Croix, WI (Minneapolis) and Scott (Minneapolis) (Figure 7, Table 4).

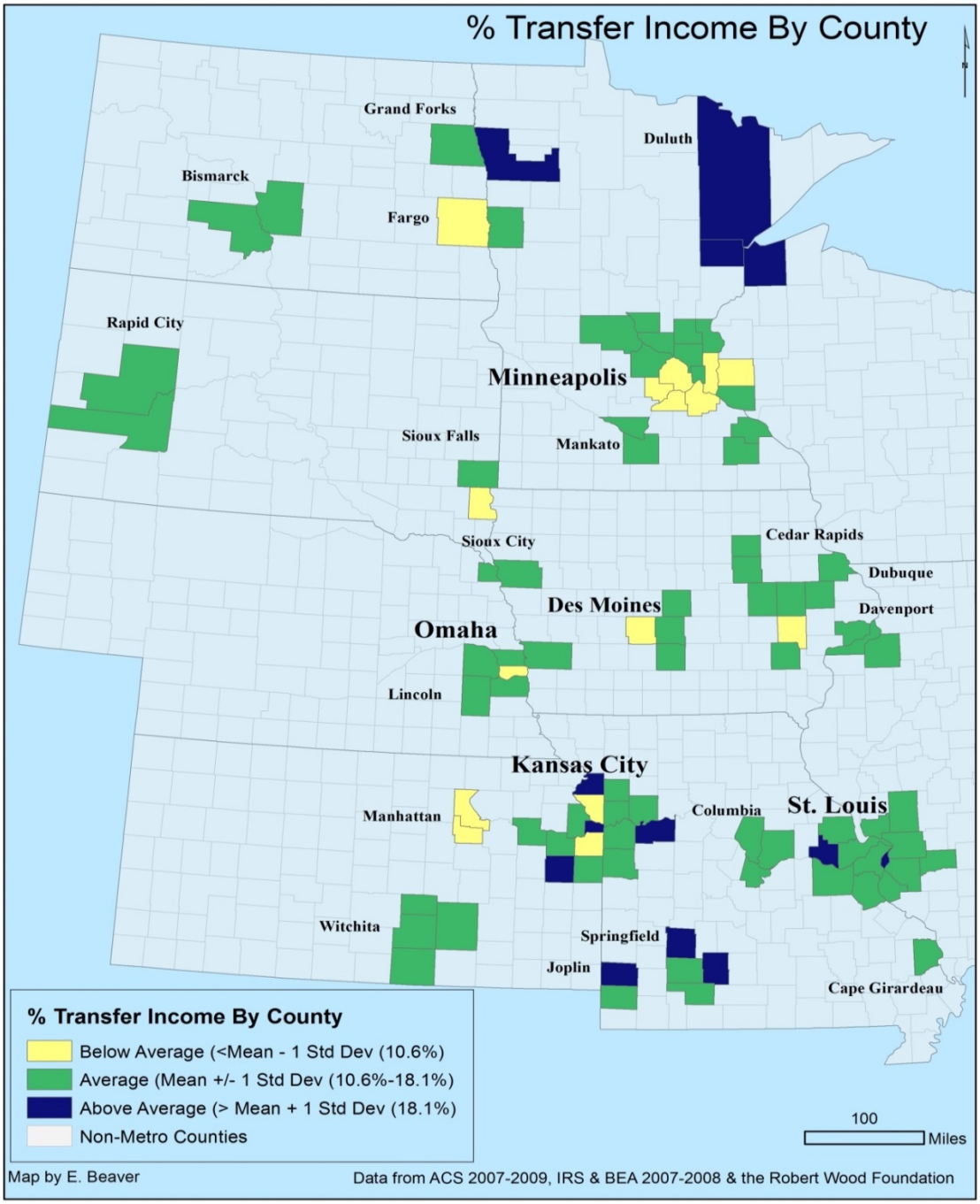
The tier of counties with higher proportions of transfers shared primary commonalities including above mean percentages of elderly populations (> 14.9%), lower than mean workforce participation percentages (< 70.1%), higher than mean poverty rates (> 10.9%) and lower than mean bachelors or better educational attainment rates (< 24.9%) (Appendix A). All of these shared traits match prior research findings regarding transfer demand and eligibility. This high-transfer tier featured a mix of large urban core counties including Wyandotte, KS (Kansas City) and the city of St. Louis, exurban counties including Lafayette (Kansas City) and Washington (St. Louis) and small metropolitan core counties such as Jasper, MO (Joplin) and Buchanan, MO (St. Joseph) (Table 4).

Table 4. Counties with Highest and Lowest Percentage of Transfer Income

Highest Transfer %		Lowest Transfer %	
Washington , MO	29.80%	Lincoln , SD	4.95%
Polk , MO	26.04%	Carver , MN	6.03%
Wyandotte , KS	22.29%	Johnson , KS	6.68%
St. Louis city, MO	21.90%	Dallas , IA	7.48%
Carlton , MN	21.86%	Scott , MN	7.71%
Webster , MO	21.81%	Washington , MN	7.93%
Douglas , WI	21.48%	Riley , KS	8.02%
Jasper , MO	21.23%	Dakota , MN	8.67%
Buchanan , MO	20.47%	Johnson , IA	8.76%
Lafayette , MO	19.90%	Sarpy , NE	9.06%
St. Louis , MN	19.85%	Platte , MO	9.08%
Polk , MN	19.78%	St. Croix , WI	9.18%
Franklin , KS	18.92%	Cass , ND	9.36%
Warren , MO	18.29%	Hennepin , MN	9.61%
Jones , IA	17.99%	Geary , KS	9.89%
St. Clair , IL	17.88%	St. Louis , MO	10.15%
Macoupin , IL	17.78%	St. Charles , MO	10.23%
Dakota , NE	17.73%	Douglas , NE	10.60%
Callaway , MO	17.66%	Monroe , IL	10.69%
Pottawattamie , IA	17.27%	Douglas , KS	10.73%

Sources: BEA 2007-2008, IRS 2007-2008

Figure 7. Percentage Transfer Income By County



Investment Income

Investment income is heavily represented in urban core counties of metropolitan areas, including Hennepin with 27.0% (Minneapolis), Douglas with 28.2% (Omaha), and St. Louis with 31.5% (St. Louis). Wealthy counties such as Washington and Anoka in Minnesota and Dallas in Iowa were notably absent from the upper tier of counties with investment income (Table 5). Among the counties in the highest tier of investment income percentages, a slim majority was urban core counties and a smaller numbers were suburban counties. Most had below average percentages of transfers (< 14.1%), median or above average percentages of elderly residents (> 14.9%), median or below percentages of workforce participation (< 70.1%) and above average percentages of bachelors degree attainment (> 24.9%) (Appendix A).

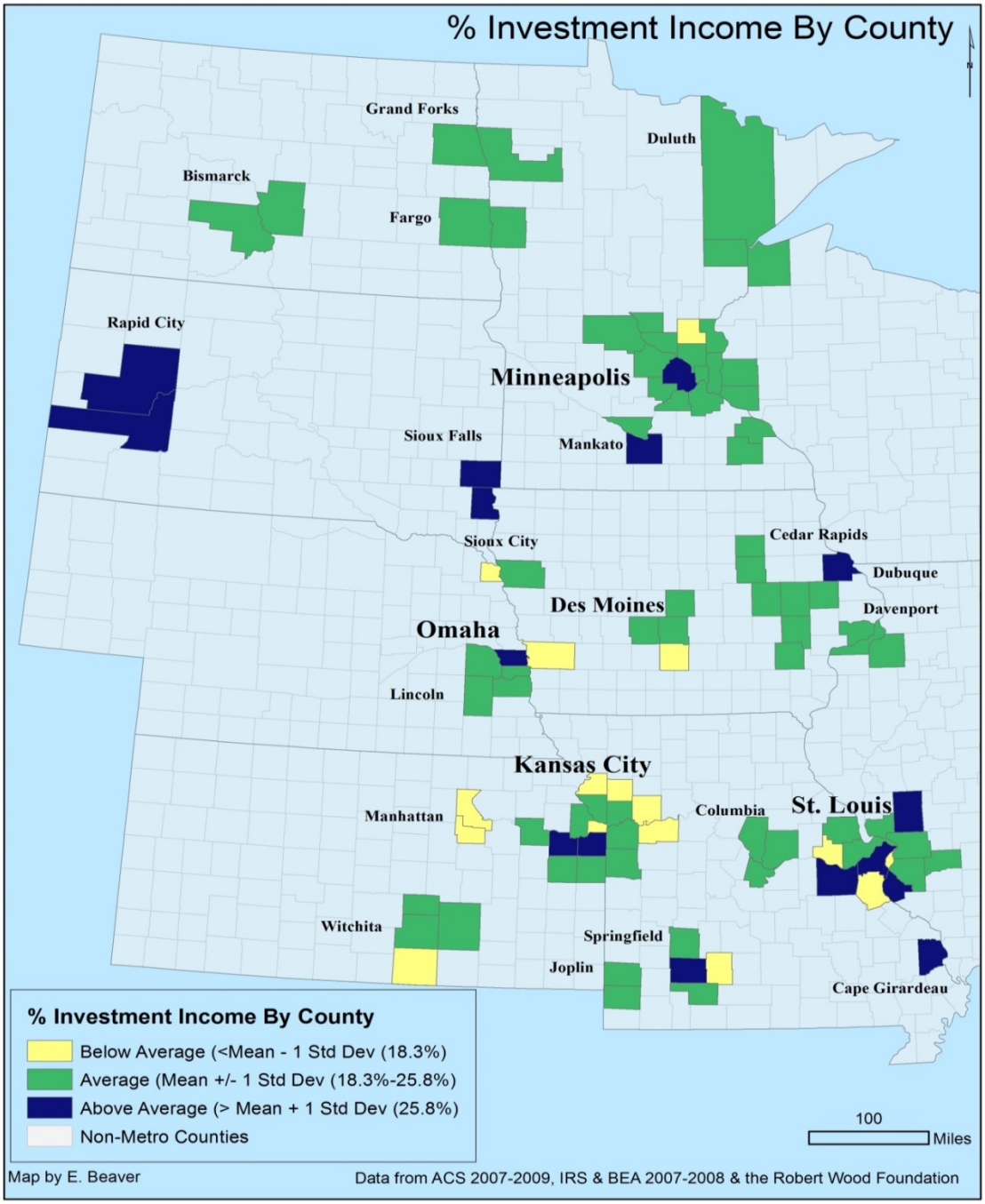
Among the counties in the lowest tier of investment income percentages, the greater majority was suburban counties and exurban counties. Fourteen had above-average percentages of transfers (> 14.1%), half had average or above percentages of elderly residents (> 14.9%), and most had average or below percentages of workforce participation (< 70.1%) and below average percentages of bachelors degree attainment (> 24.9%) (Appendix A).

Table 5. Counties with Highest and Lowest Investment Income Percentage

Highest Investment %		Lowest Investment %	
St. Louis , MO	31.50%	Washington , MO	12.95%
Johnson , KS	29.27%	Wyandotte , KS	12.99%
Pennington , SD	28.65%	Pottawattamie , IA	14.54%
Meade , SD	28.57%	Dakota , NE	15.47%
Douglas , NE	28.17%	Ray , MO	15.70%
Macoupin , IL	28.04%	Isanti , MN	15.99%
Lincoln , SD	27.52%	Sumner , KS	16.14%
Dubuque , IA	27.39%	Webster , MO	16.32%
Minnehaha , SD	27.34%	Warren , MO	16.50%
Greene , MO	27.24%	Clinton , MO	16.54%
Douglas , KS	26.75%	Jefferson , MO	16.87%
Hennepin , MN	26.70%	Warren , IA	16.91%
Franklin , MO	26.58%	Lafayette , MO	17.32%
Blue Earth , MN	26.51%	Geary , KS	17.79%
Monroe , IL	26.31%	Buchanan , MO	17.80%
Cape Girardeau , MO	26.19%	Riley , KS	17.96%
Henry , IL	25.76%	St. Louis city, MO	18.01%
Callaway , MO	25.60%	Wright , MN	18.34%
Rock Island , IL	25.55%	Sarpy , NE	18.34%
Ramsey , MN	25.30%	Miami , KS	18.59%

Sources: BEA 2007-2008, IRS 2007-2008

Figure 8. Percentage Investment Income by County



Principal Component Analysis: Explaining Variation

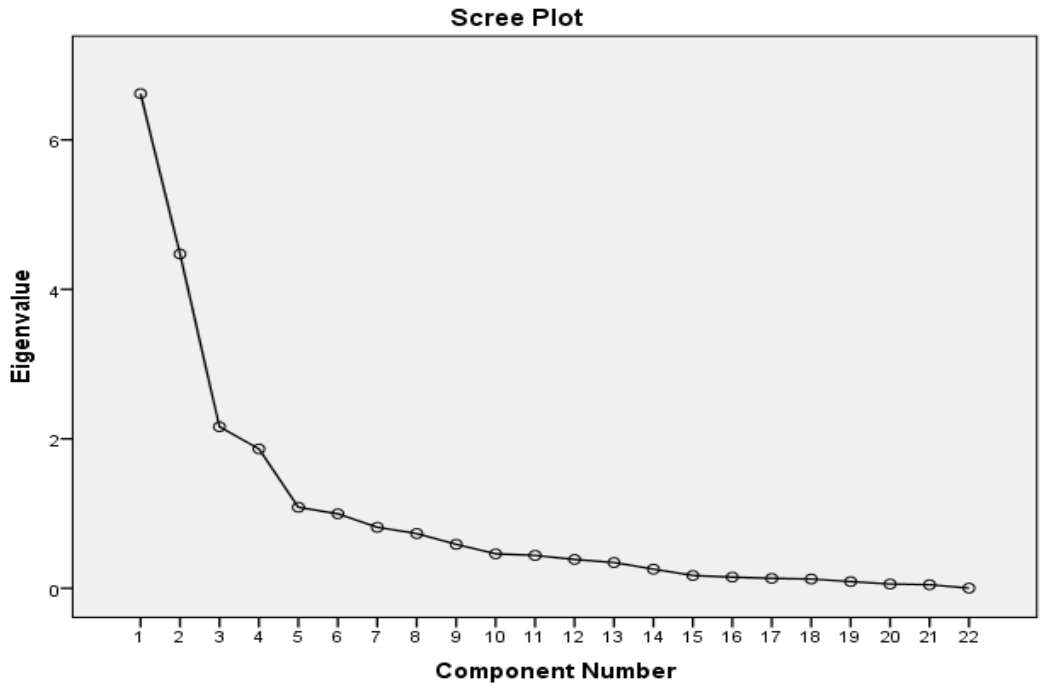
Principal components analysis (PCA) was utilized as a variable-reduction technique to create a smaller group of 'principal components', artificial variables accounting for as much of the variance in the original variables as possible. PCA resolves concerns of multi-collinearity among the 22 variables that used in this thesis since there are variables highly correlated with one another and such related variables could in analysis measure or account for the same aspect and distort the regression analysis. PCA was suitable for use because the variables were all measured at the continuous level, had linear relationships, and outlier tests indicated no significant outliers among the variables.

Following general guidelines suggested by Dunteman (1989), only components with eigenvalues above 1.0 were included. After SPSS generated the eigenvalues and eigenvectors of the correlation matrix, the eigenvalues were tested for their heterogeneity by Bartlett's test of sphericity. The results were significant, less than .05, indicating the 22 variables were correlated, also observed earlier by the correlation matrix having many correlations among variables higher than 0.3, suggesting PCA was suitable. Sampling adequacy was affirmed by the Kaiser-Meyer-Olkin (KMO) Measure of Sampling Adequacy and with a score of .621, this was judged adequate for analysis. Component results above an eigenvalue of 1.0 in SPSS supported the creation of five components.

SPSS then automatically converted the data matrix to a matrix of standard scores and multiplied it by the eigenvectors matrix, creating the component scores matrix. Communality scores for all the variables were generated, marking the total influence of a single observed variable from all those associated with it (Table 6). Its value is similar to

R^2 in a multiple regression analysis, indicating the percentage of variability attributed to a model. These are summed up to be the total percentage of variance for the components individually and as a group (Table 7). In a PCA analysis model, achieving 100% variance accountability is not normal, so the 73.7% total is suitable for this research. Analyses of the five resulting components indicate they can be interpreted with relevant social science research and do not require rotation for clarity or meaning. This conclusion of five components was supported by the scree plot, a visual display of the data set (Figure 9).

Figure 9. Component Variables



These groupings of five unique components uncorrelated with one another explain 73.7% of total variance and can be interpreted by the variables which feature the heaviest

loads onto the components (e.g. they have the highest component loadings). The first principal component accounts for 30.1% of the total variance; the second another 20.3% and subsequent components comprise 9.8%, 8.5% and 4.9% respectively (Table 7).

Table 6. Communalities for PCA

Communalities	**Initial**	**Extraction**
SINGPHH	1	0.73
Elder	1	0.8
NONCAUC	1	0.86
RENTOCC	1	0.71
WKFO	1	0.69
UENMP	1	0.68
POV	1	0.87
MARRIED	1	0.77
BACHED	1	0.91
HSDROP	1	0.8
MOVERS	1	0.67
MEDHMV	1	0.58
UNINSUR	1	0.61
LBW	1	0.63
CONSTR	1	0.72
OFFICE	1	0.66
SERVICE	1	0.66
MGMTPROF	1	0.86
PROD_TRAN	1	0.7
Diabetes	1	0.74
JOB_CHG	1	0.7
POP_CHG	1	0.85

Table 7. Total Variance Explained by Principal Components Analysis

Component	Eigenvalues			Extraction Sums of Squared Loadings		
	Total	%Variance	%Cumulative	Total	%Variance	%Cumulative
1	6.62	30.09	30.09	6.62	30.09	30.09
2	4.47	20.33	50.42	4.47	20.33	50.42
3	2.16	9.82	60.24	2.16	9.82	60.24
4	1.87	8.48	68.72	1.87	8.48	68.72
5	1.08	4.93	73.65	1.08	4.93	73.65
6	1	4.53	78.18			
7	0.82	3.71	81.89			
8	0.73	3.33	85.22			
9	0.59	2.67	87.89			
10	0.46	2.1	89.99			
11	0.44	2	91.99			
12	0.39	1.76	93.74			
13	0.34	1.57	95.31			
14	0.26	1.16	96.47			
15	0.17	0.78	97.25			
16	0.15	0.68	97.93			
17	0.13	0.6	98.53			
18	0.12	0.57	99.1			
19	0.09	0.41	99.51			
20	0.06	0.26	99.77			
21	0.05	0.22	99.99			
22	0	0.01	100			

When interpreting the components, a positive loading indicates there is a positive correlation between the component and that variable and vice versa for negative loadings.

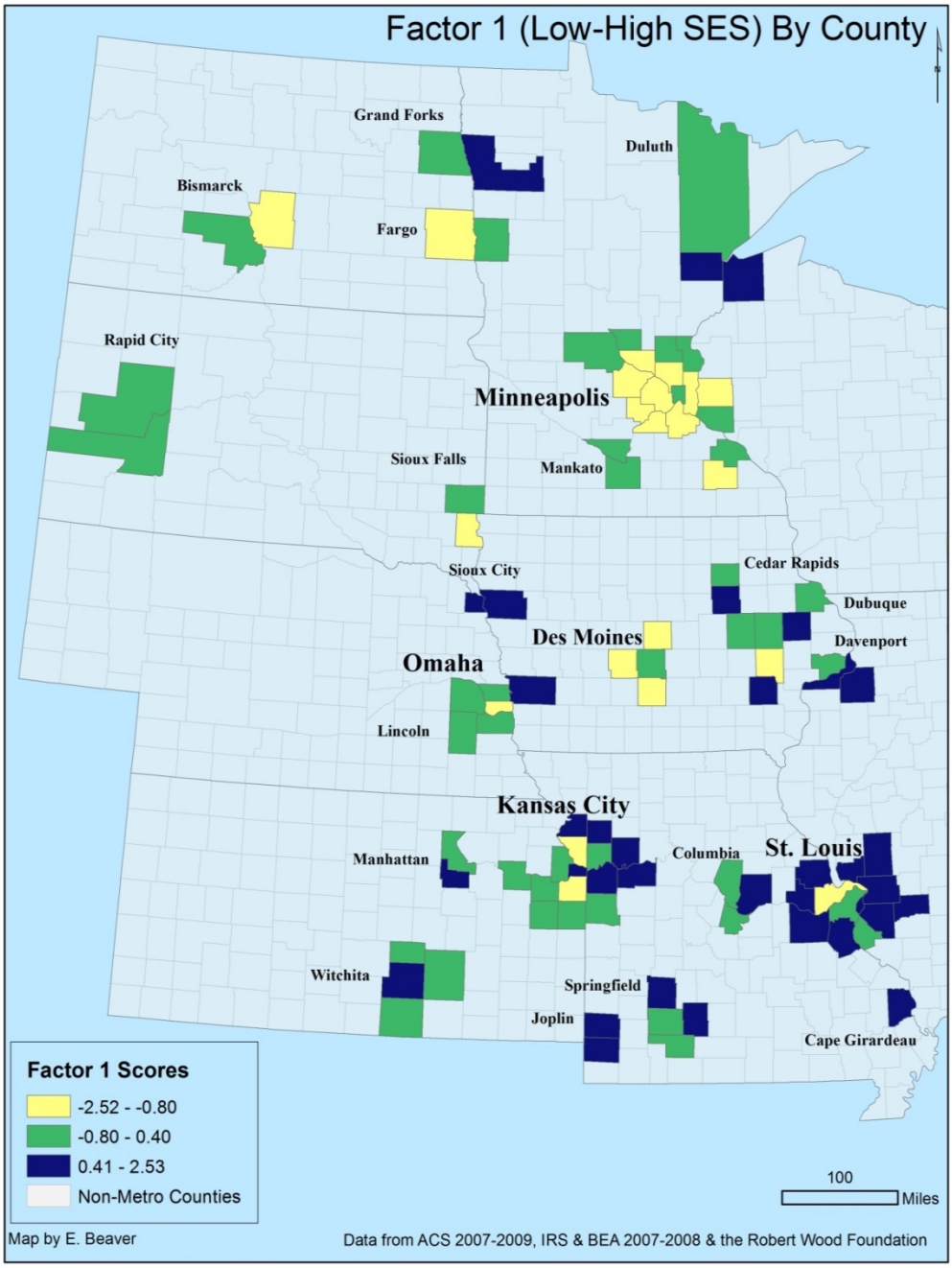
For instance, the first component describes the general correlation trend resulting from counties with higher percentages of high school dropouts, individuals with diabetes, employment in production and transportation sectors, elderly, employment in service sectors, unemployment and infants born with low birth weight. Concurrently, these counties have lower percentages of job and population growth, bachelor's degree education achievement or better, employment in the management and professional sectors and workforce participation.

The component loadings largely match the correlation matrix of variables. The first component is a definite indicator of lesser or marginal socio-economic status and conditions. It contains variables with positive loadings that are connected to weak growth in economic development literature and variables with negative loadings connected to stronger economic growth (Leigh and Blakely, 2013).

In this first component, positive scores are prevalent in counties with higher proportions of elderly, greater than median employment in lower-skill and pay employment sectors, higher unemployment and sub-optimal health conditions (Figure 10). Negative scores predominate in counties with higher workforce participation rates, greater than median employment in the high-skill and high-pay professional and management sector, greater instances of growth via population and job increases from 2000-2008 and higher educational attainment levels.

These results suggest the component captures higher and lower dynamics of socio-economic status. This is seen in the concentration of positive scores in the Kansas City and St. Louis metropolitan areas and negative scores in much of the Minneapolis and all of the Des Moines metropolitan areas.

Figure 10. SES 1 (‘Low-High Socio-Economic Status’) Component

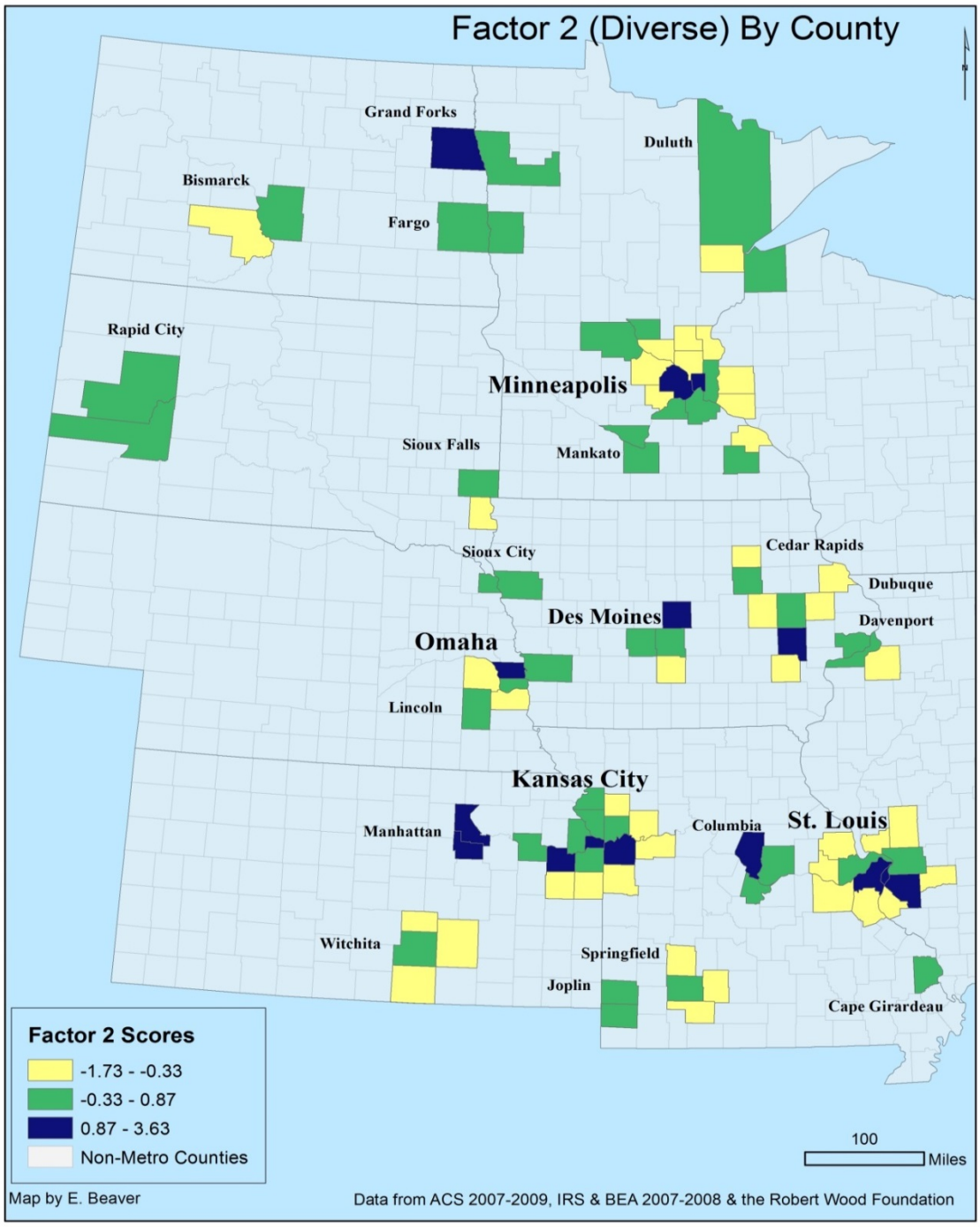


The second component is another signal of socio-economic status and demographic background. For this component, positive scores are prevalent in counties

with more diverse ethnic populations, higher rates of poverty and percentage of renters while negative scores indicate those with strong levels of marriage and employment in the construction sector (Figure 11).

These loadings suggest a unique role for construction employment in Upper Great Plains counties that have lower than average levels of Hispanic immigrant workers and possibly less downward pressure on wages as a result (Thompson, 2010). They also indicate the loadings reflect differences with diversity in household composition, economic status and ethnicity, to the point that relatively wealthy Hennepin County, the urban core county of Minneapolis, has a very positive score driven in part by its greater diversity and renter demographics, as do many of the young, renter-heavy counties with major universities. This distinction is apparent with the poorer urban core counties in the inner St. Louis and Kansas City metropolitan areas.

Figure 11. SES 2 ('Diverse') Component



The third component describes the trend in correlation between single-parent households and employment in the office sector, a lower-paying sector that has less educational requirements while paying substantially less than other employment sectors (Roberts et al., 2012). For this component, positive scores reflect higher levels of single parent households and employment in the office sector (Figure 12). These two are moderately correlated (.330) and office sector employment does tend to have lower requirements for education, experience and skill, factors that are reflected in single-parents who face challenges re-entering the workforce after exiting to have and care for a young child, leading the component to be considered an indicator of lower skills in the workforce. Concentrations are evident in counties with higher single-parent household percentages, especially in the Sioux Falls and St. Louis metropolitan areas.

The fourth component describing correlation trends in migrants in the last 12 months and those who lack health insurance is an indication of the policy problem of health insurance tied to employment, whereby recent migrants between jobs or moving for opportunity elsewhere often lack health insurance between jobs, a dilemma that can worsen economic vulnerability (EBRI, 1999). This component finds positive scores for counties with a greater level of migrants and uninsured people, moderately correlated (.365) variables that share a condition of uncertainty. Positive concentrations are observed in many exurban and suburban counties as well as smaller metropolitan areas for Springfield, MO, Fargo, ND and Grand Forks, ND while negative scores predominate in urban core counties of major urban areas (Figure 13). Finally, the fifth component is filled by median home value alone (Figure 14).

Figure 12. Lower-Skill Component

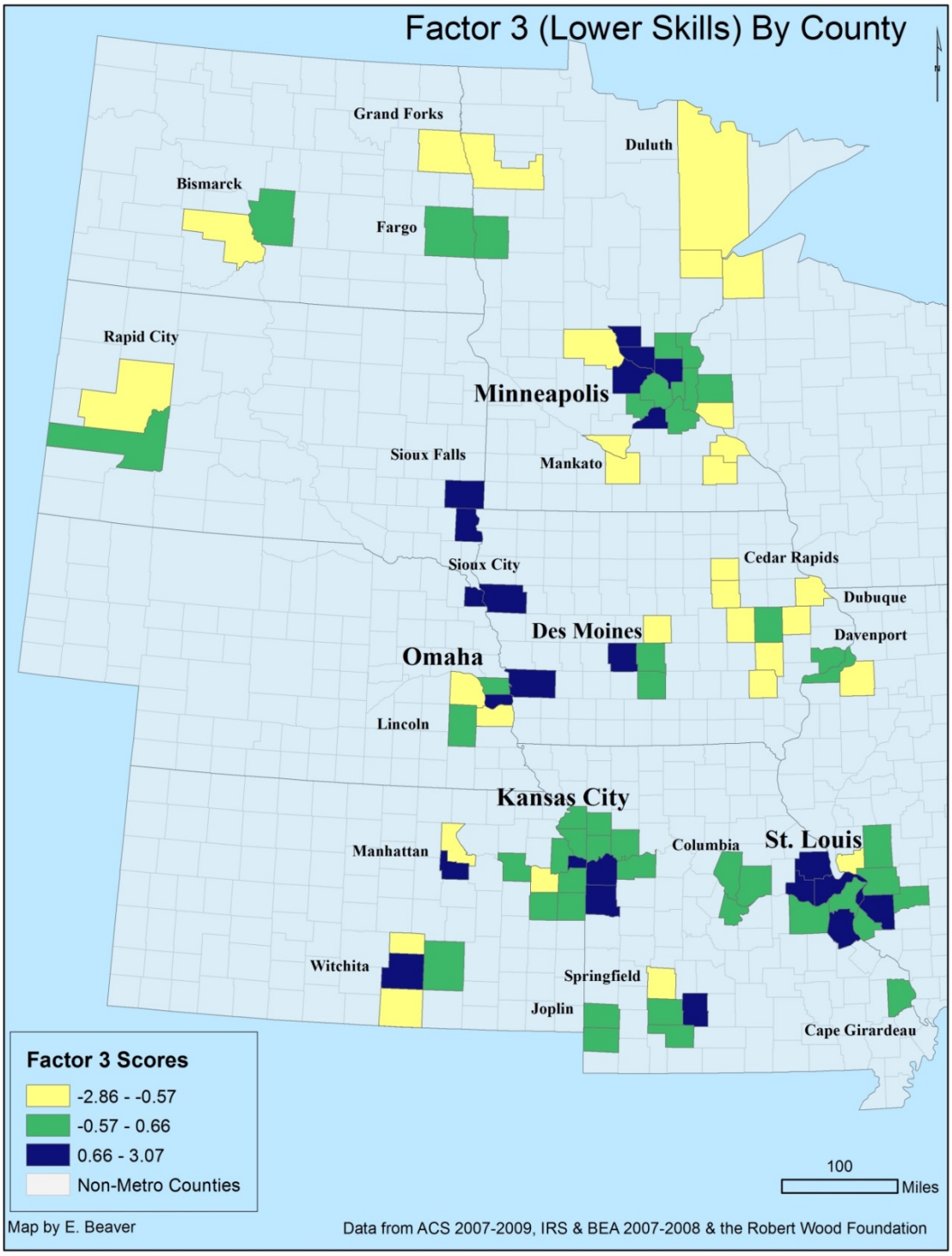


Figure 13. Uncertainty Component

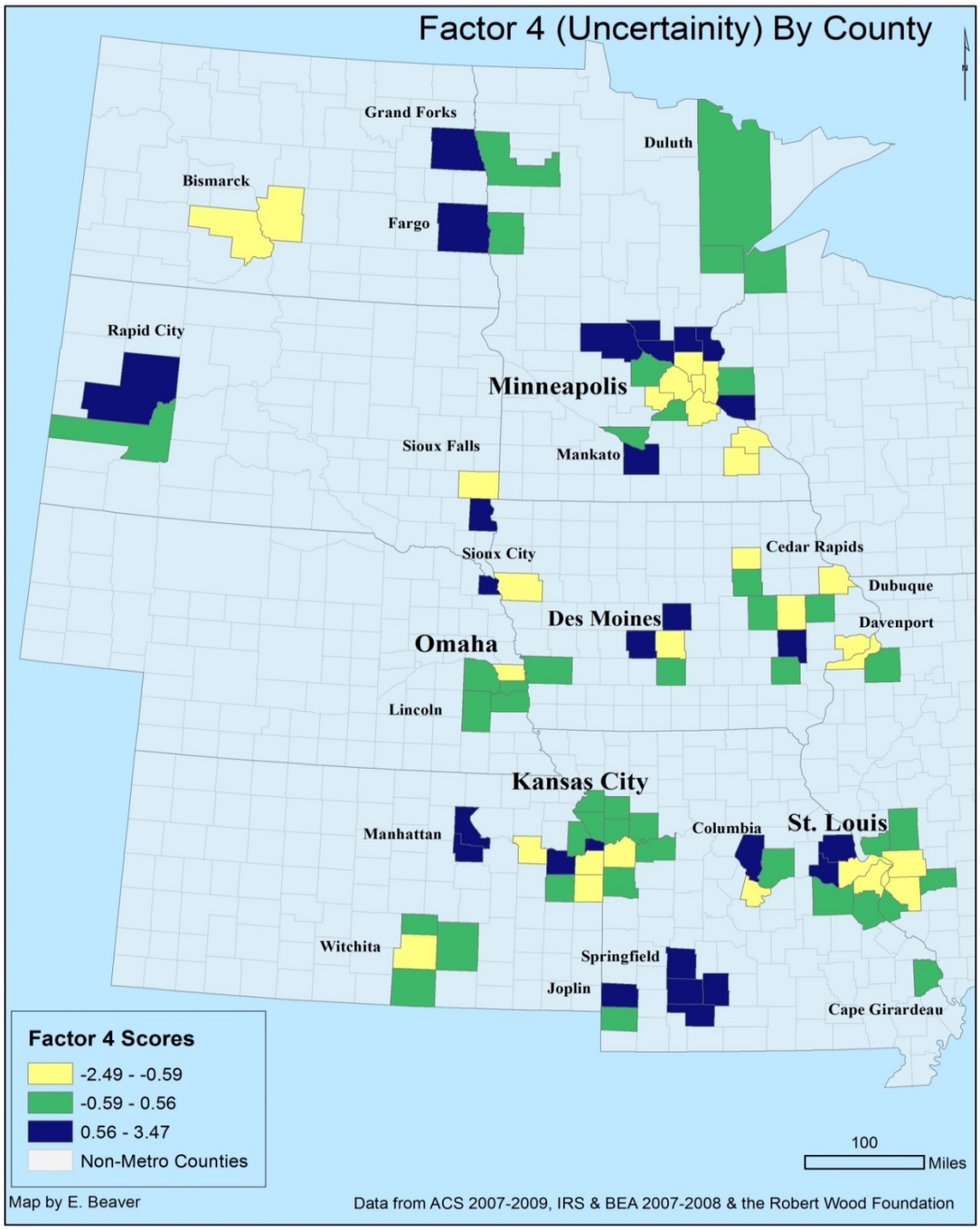


Figure 14. SES 5 Median Home Value

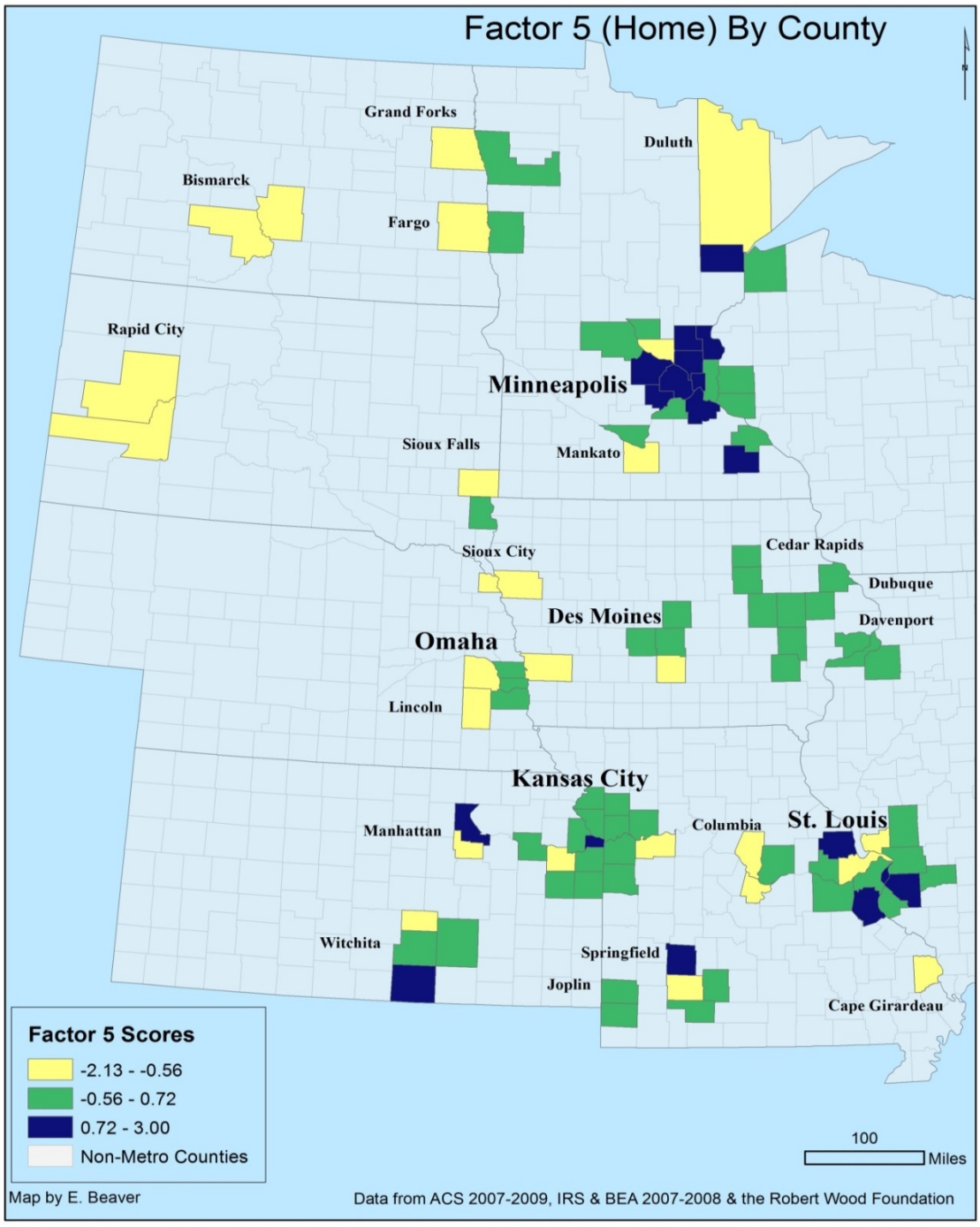


Table 8. Component Loadings

Variables	SES1	SES2	Service	Uncertainty	Home
HSDROP	**0.85**				
DIAB	**0.81**				
PROD_TRANS	**0.63**	-0.52			
Elder	**0.61**	-0.38	-0.40		
SERVICE	**0.56**	0.41	-0.36	-0.33	
UNEMP	**0.53**		0.34		0.44
LBW	**0.48**	0.45	0.30	-0.33	
JOB_CHG	**-0.54**		0.51	0.38	
POP_CHG	**-0.62**		0.48		
BACHED	**-0.72**	0.58		-0.30	
MGMT_PROF	**-0.74**	0.42			
WKFO	**-0.77**				
NON_CAUC		**0.76**	0.31		
POV		**0.66**		0.37	
RENT_OCC		**0.62**			-0.56
CONSTR		**-0.68**			
MARRIED		**-0.84**			
OFFICE		0.31	**0.60**		-0.36
SINGPHH		0.33	**0.57**		
MOVERS		0.46		**0.63**	
UNINSUR				**0.54**	
MEDHMV					**0.56**
Eigenvalues	6.62	4.47	2.16	1.87	1.08
% of Variance Explained	30.09	20.33	9.82	8.48	4.93
Total % Variance Explained	73.65%				

Note: Loadings < 0.30 have been suppressed in this table.

Linear Regression Analysis

With five principal components representing twenty-two variables that account for socio-economic, demographic and industrial composition conditions, testing for the existence or extents of relationships these components had with investment income and transfer income was possible. A stepwise regression model is used in SAS 9.3 to determine the influence of each PCA variables on the NEI types, while controlling for the influence of PCA variables. Multiple options for the dependent variables were available and three options were evaluated for identifying the best model possible. These three included a model incorporating the total NEI amount for each county, models utilizing the transfer and investment income totals, and a model based on non-earned income ratio where an investment income over transfer payment ratio is calculated.

The first model is a simple aggregation model, the second a contrast of NEI types, and the third a model designed to identify the more influential NEI type in a county (Debbage and Beaver, 2012). Diagnostic tests of the components scrutinized potential extreme outliers and fit problems and no significant issues were detected. While multi-collinearity concerns were unnecessary because of the PCA, the components did meet most of the assumptions for linearity, homoscedasticity and normality. However, after testing in both models whether the model coefficients were zero with an alpha level of .05, several principal components were found to not have a statistically significant relationship with p-values exceeding .05.

Model 1: Total NEI

The final model for total NEI contained an adjusted R-squared of .386, significant T-test results for the b coefficients, an F-score of 31.88 suggesting an accurate equation and a Mallow's Cp score of 7.84, the last score indicating a high level of bias in the model (Table 8). Three of the five principal components were found not to have a statistically significant relationship with NEI. These components included the low-high socio-economic status variable (.07), the lower-skill and compensation employment variable (.18) and the median home value variable (.09). The two remaining components for the model were the diversity (DI) and uncertainty (UN) components. Using the unstandardized b coefficients, the estimated regression equation is:

NEI = 2305734 + 1579810 (DI) – 1926048 (UN)

The diversity component in the model accounted for 43% of the variation, with an increase in this component increasing NEI in a county by $1,579,810. This component contains variables that can amplify investment and transfer income alike, including the percentage of renters and the percentage of people in poverty, relationships previously found nationally (Mansoon and Groop, 1990) and within regions (Debbage and Beaver, 2012).

The uncertainty component accounted for 21% of the variation, indicating its increase would lead to a decline in NEI by $1,926,048. Among the many reasons for why people migrate or do not have health insurance, many of them suggest a decline in investment income opportunity. Increased migration patterns can suggest a county that is

more economically dynamic (Nelson, 2008) and thus less dependent on transfers. The absence of health insurance is less clear since it can include independent contractors, those waiting for the annual enrollment period at a new employer and the young, none of whom automatically suggest population groups more reliant on transfers. It also is a proxy for the percentage of elderly in a county, since they have near-uniform access to government health insurance via Medicare.

Model 2: Transfer and Investment Income

The final model for transfer income contained an adjusted R-squared of .510, significant T-test results for the b coefficients, an F-score of 26.53 suggesting an accurate equation and a Mallow's Cp score of 4.09 (Table 8). The first principal component, the low-high socio-economic status variable, was found to not have a statistically significant relationship with a p-value of .76, while the other four components had statistically significant relationships that were not zero with p-values below .05. This model contained the diversity (DI), office (OFF), uncertainty (UN) and median home value (MHV) components. Using the unstandardized b coefficients, the estimated regression equation is:

Transfer Income = 776526 + 519160 (DI) + 174022 (OFF) - 556066 (UN) + 174116 (MHV)

The first variable, the diversity component, accounted for nearly half of the total variance accounted for by the model at 44%. An increase in this component would increase transfer income in a county by $519,160. This component combined elements of

youth through its percentage of renters, lower socio-economic status, and ethnic diversity while containing negative relationships with marriage levels and employment in construction. Lower income levels have been positively linked with transfers by Mansoon and Groop (1990) while Hispanics and African-Americans experience a significant wealth gap comparative to whites (Kochar et al., 2011).

The next principal component, comprising 41%, is the office (OFF) component linking the percentage of single-parent households and employment in the office sector. Transfers would increase in a county by $174,022 with an increase in this component. The third component, the uncertainty accounts for as little of the model's variation, blends together those without health insurance and movers within the last 12 months, a diverse group of people who include the young, the recently unemployed, those moving for opportunity or for a job transfer and numerous other life situations (EBRI, 1999). This group's situational diversity is such that it cannot be accurately described as comprising mainly people in the higher, middle or lower income ranges, so its negative relationship, a decrease of transfers by $556,066 with an increase in the component, with transfers is not unsurprising. The final variable that also comprises a minimal amount of the model's variation is the median home value variable. It increases transfers by $174,116 with each concurrent increase in median home value. This suggests home ownership is a proxy for the elderly, a group that disproportionately accounts for transfer receipts.

For the second model that included investment income rather than transfers, the final model contained an adjusted R-square of .370, significant T-test results for its three b coefficients, an F-score of 20.19 and a Mallow's Cp score of 5.16. The third and fifth

principal components were found to not have a statistically significant relationship with a p-value of .3099 and .1488 respectively, while the remaining three components had statistically significant relationships that were not zero with p-values below .05. This model contained the lower-higher socio-economic status (LOH), diversity (DI) and uncertainty (UN) components (Table 8). Using the unstandardized b coefficients, the estimated regression equation is:

Investment Income = 1529208 - 521674 (LOH) + 1060650 (DIV) - 1369981 (UN)

The first variable, the lower-higher socio-economic status component, accounted for more than half of the model's variation at 59%. An increase in this component would decrease investment income by $521,674 in a county. This component contained many variables that could reduce investment income potential, such as educational attainment shortfalls (higher high school dropout rates), health troubles (percentage diabetes and low birth weight for child births), greater than median unemployment in lower-skill and pay employment sectors, and higher unemployment.

The second variable, the diversity component, entered the model with a positive impact on investment income of $1,060,650 for each concurrent increase. This component includes percentage of renters, the minority population and the poverty rate as well as the percentage of married couples and employment in the construction sector. It is probable that given investment income's large presence in major metropolitan counties such as Hennepin, MN (Minneapolis) and Douglas, NE (Omaha), this result reflects the

influence of their disproportionately higher renter rates, which can suggest a more dynamic labor market and less unemployment (Blanchflower and Oswald, 2013).

Finally, the third variable, the uncertainty component, accounted for little of this model's variance at 9%. Its negative slope does suggest economic uncertainty as reflected in recent migration and absence of health insurance can diminish investment income opportunities. A worker recently joining a company in the past 12 months is unlikely to have benefited from retirement and investment programs at their new employer. Also, most of the counties with significant investment income were not among the top third in a ranking of the uncertainty component.

Model 3: Ratio of NEI

The final model includes the NEI ratio (NEIR), a ratio where investment income is the numerator and transfer income is the denominator. It contained an adjusted R-squared of .595, significant T-test results for the b coefficients, an F-score of 72.68 suggesting an accurate equation and a Mallow's Cp score of 3.29 (Table 8).

Three of the five principal components were found not to have a statistically significant relationship with the NEI ratio. These components included the lower-skill and compensation employment variable (.07), the uncertainty variable (.71) and the median home value variable (.92). This model contained the low-high socio-economic status (LOH) and diversity (DI) components. Using the unstandardized b coefficients, the estimated regression equation is:

$$NEIR = 1.74 - 0.571(LOH) + 0.119\ (DI)$$

Table 8. Regression Results

Variables	Model 1	Model 2	Model 3	Model 4
Constant	2305734	776526	1529208	1.74
PC1	-5452488	-23574	-521674*	-0.57195*
PC2	-1579810*	-519160*	1060650*	0.11949*
PC3	409943	174022*	235921	0.09
PC4	-1926048*	-556066*	-1369981*	-0.02
PC5	510557	174116*	336441	0
F-Statistic	31.88	26.53	20.19	72.68
Adj. R-Square	0.39	0.51	0.37	0.59
Note: *Significant at 0.05 level				
Model 1: NEI%				
Model 2: Investment Income				
Model 3: Transfer Income				
Model 4: NEI Ratio				

The low-high socio-economic status component holds a negative relationship with the NEI ratio so that an increase leads to a decrease in the ratio of 0.571 (Debbage and Beaver, 2012). This component contains many variables that depress investment income or increase transfer income, including the percentage of elderly, in this instance, a proxy for aging in place (Nelson, 2008) and low birth weight and high diabetes rates that increase disability eligibility.

Negative loadings within the component that pull the component score down include several that increase investment income potential. Among these are bachelor's degree attainment and employment in the professional and management industry sector

These variables are known to increase earnings by representing higher-skill, higher-pay employment levels and the improved investment and labor market such an educated, higher-skilled workforce represents (Wenzl, 2008; Debbage and Beaver, 2012).

The other variable in the model, the diversity component, increases the ratio by 0.119 when it increases. This component has variables that can increase investment income potential or conditions conducive to it, including the percentage of renters (Blanchflower and Oswald, 2013) and the ethnic diversity of the county (Florida and Gates, 2001). We suggest the diversity component is a strong indicator of more urban-like conditions in a county, with a younger, more single and more educated workforce renting in a denser, more expensive housing market driven by higher demand. These conditions match those found in major metropolitan counties across America (Blanchflower and Oswald, 2013).

Of the three models, the best is the model incorporating the NEI ratio of investment income divided by transfers. It accounts for the most variation within the components, has the least detectable bias, and has the components with the most included original variables. The second model containing the investment and transfer models has more detectable bias and accounts for less of the variation in the components. The first model has considerable bias and also accounts for less of the variation in the components.

CHAPTER V

SUMMARY, DISCUSSION, AND CONCLUSIONS

Summary

By using metropolitan counties of Upper Great Plains, this thesis is the first of its kind that examines geographic patterns of all of aspects of NEI and determines its influence on local economies for the years of 2007-2008. This thesis poses questions about NEI's relationships in the region. What are the geographic patterns of NEI, investment income and government transfers, apparent in the upper Great Plains region? How influential is NEI in this region's economy? What factors (e.g., socio-demographics, economic, etc.) explain the geographic variations of NEI? Very specifically, do these variations indicate related to different industrial sector patterns or shaped by the urban system such as urban, suburban, or exurban? After analyzing the spatial aspects of the NEI phenomenon and applying statistical analytics to develop answers to these questions, a definitive conclusion and path forward for further research was reached.

Spatial analysis of the Upper Great Plains region's metropolitan counties indicate NEI concentrates across all major urban, suburban and exurban counties. Counties with higher levels of NEI tended to have above median levels of both investments and transfers. However, counties with lower levels of NEI tended to be suburban or exurban.

Among suburban or exurban counties though, the novel inclusion of capital gains and private pensions into NEI's investment income category dramatically increased many of their investment income totals. There was less increase than expected in major urban counties, though this variance can be explained by the lower levels of existing investment income in suburban or exurban counties comparative to their more urban counterparts.

Among the two NEI types, even though metropolitan counties alone were considered, specific concentrations were observed that tracked with previous research on conditions within counties that favored one NEI type over the other (Forward, 1990: Campbell 2003 : Debbage and Beaver, 2012). Transfer-heavy counties tended to have higher percentages of populations more reliant on transfers including the elderly, the poor, those with lower educational attainment and those unable to work for a variety of reasons. Counties with higher levels of investment income tended to be urban cores and have above-median bachelor's degree or better educational attainment levels. Links between NEI types and the prevalence of specific industrial sectors in a county were not observed.

After surveying this geography of NEI, statistical analysis utilizing principal component analysis and multivariate linear regression was employed to determine what, if any, relationships existed between NEI and socio-economic, health and demographic conditions within counties. Condensing twenty-two independent variables reflecting these conditions into five related principal components reduced multi-collinearity concerns and rendered them more suitable for a regression analysis. After testing several possible regression models, a final model utilizing the NEI ratio of investment income

over transfer income was chosen that pinpointed two linked sets of socio-economic conditions identifying socio-economic status as most influential in accounting for the variance among counties of NEI. These two sets of conditions represent levels of educational attainment, the median health of residents, degree of population and employment growth, and employment in specific industry sectors linked to higher or lower median earnings within counties. They have a significant influence on the greater or lesser prevalence of investment income compared to government transfers.

Discussion

The differences between the BEA and IRS accounts of NEI and regional differences and similarities in NEI stand out as topics for discussion. Overall, the disparities between the BEA's accounting of investment income compared to the investment income total that includes capital gains and private pension from the IRS was substantial. Reliance on the BEA framework alone of investment income leads to incomplete analysis. This is especially true considering these numbers are partially deflated because capital gains in particular were depressed by the 2008 economic recession diminishing investment activity. Indeed, this strongly suggests the importance of NEI is even greater than previously thought. This reality was memorably detailed by Wenzl's account of the one-time massive spike in income in 2004 in King County, Washington because Microsoft issued a special dividend to shareholders (2008). It is affirmed by the dramatic instant loss of wealth observed in the 2007-2008 financial market crashes.

The geographic patterns of NEI observed in this study's findings matched earlier research findings of Forward (1990) but differed from Debbage and Beaver (2012) who had identified wealthy suburban counties in the Southeast U.S. as leaders in investment income. The wealthiest counties in the metropolitan Upper Great Plains were not well-represented among the top tier of investment income counties. This suggests either the inclusion of IRS capital gains and private pension data dramatically impacted the geography of investment income or that regional differences exist. Both possibilities or a mixture of the two have merit with a median 36% increase in investment income resulting from the inclusion of the IRS data and the Upper Great Plains, like counterparts on the West Coast or in the Northeast, having differing socio-economic profiles from the Southeastern counties studied. A follow-up study of the Southeastern counties with IRS data included would be necessary to ascertain for certain whether those regional differences appear in NEI profiles.

Conclusion

These research findings suggest that NEI needs to be examined more closely by economic development, planning, business and civic leadership professionals for local areas. The influence of NEI is far greater than the attention it receives in the media or in the academic literature. NEI's importance is heightened by this study's novel inclusion of capital gains and private pension data from the IRS to improve the current NEI data available from the BEA. This importance is observed in the numerous counties that gained an additional ten percent or more of their income with these IRS categories included. These results strongly suggest the current BEA framework is significantly

incomplete for counties relying on its data for their NEI projections, especially if the results in this thesis are considered in their proper temporal context. In the years studied (2007-2008) capital gains were considerably reduced for 2008 by the economic recession and in subsequent years can be expected to have increased substantially, significantly expanding the difference between the BEA's estimates and the more complete NEI data format introduced here.

After meeting the pressing need to incorporate NEI into local economic discussions, how should NEI then be viewed by counties in a policy context? It has an enormous influence on their economy that, as explained in the literature review, is particularly conducive to changes in government policy and regulations. Whether changes in the taxation rates of capital gains or the means-testing of transfer programs such as Medicare or Medicaid, NEI has very real, lasting impact on local economies. It directly or indirectly employs a significant share of a county's workforce.

Local medical and service sectors are particularly buoyed by healthcare programs such as Medicare and programs that transfer monies to those most vulnerable, such as the disabled and poor, allowing them to spend money on services and goods they otherwise would buy reduced amounts of or go without. Cuts in such programs or changes in related policies would have stark impacts on local employment and tax revenues. Across the country, local business owners and leaders are strategizing about what to do in the face of potential devastating cuts to transfer programs (Weisbecker, 2013).

Beyond this thesis and the current debates over NEI policies, NEI must be studied in the post-economic recession era, a time of rising retirement levels linked to

demographic changes, substantial populations of long-term unemployed and widening inequality (Edsall, 2012). NEI's relationships with industry, socio-economic conditions, and other demographic characteristics could be better explored via structural equation modeling, a tool that would allow for improved model-building and cross-variable analysis. It could be incorporated into routine economic development reports as an indicator of socio-economic and demographic conditions in the county or local area. Finally, NEI could be considered as part of a vulnerability-prosperity index or measure, whereby local governments can ascertain how vulnerable or influenced they are to policy changes from Washington D.C. and state capitols that could cause the third or more of their total income that is NEI to shrink or grow.

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APPENDIX A

COUNTY SOCIO-DEMOGRAPHIC VARIABLES

County	Elder	NONCAU	MARRIED	POP_CHG	SINGPH	WKFO	UENMP	POV	BACHED	HSDROP	UNINSU	LBW	Diabetes
Anoka , MN	11.62%	9.77%	55.24%	8.95%	9.10%	75.69%	6.30%	6.50%	25.07%	7.73%	8.50%	6.49%	7.30%
Benton , IA	17.34%	0.75%	60.85%	2.98%	8.04%	71.03%	5.40%	6.30%	17.25%	7.84%	12.50%	5.64%	7.40%
Benton , MN	12.17%	2.81%	50.89%	10.54%	9.80%	75.28%	6.80%	13.60%	19.23%	9.53%	11.60%	7.33%	6.20%
Black Hawk , IA	16.93%	11.31%	47.87%	0.36%	8.84%	65.97%	6.20%	17.80%	23.96%	10.43%	13.50%	8.05%	7.90%
Blue Earth , MN	13.90%	5.54%	43.69%	11.48%	7.17%	74.27%	6.40%	18.30%	29.60%	7.27%	14.80%	6.18%	6.40%
Boone , MO	11.45%	12.68%	46.41%	15.40%	8.58%	71.30%	5.80%	18.70%	43.82%	8.14%	19.50%	7.68%	7.30%
Bremer , IA	20.17%	1.11%	61.76%	3.81%	5.83%	68.36%	3.40%	6.10%	26.62%	6.11%	13.00%	6.10%	7.90%
Buchanan , MO	17.07%	6.05%	48.09%	2.13%	10.61%	63.15%	6.30%	15.00%	18.66%	14.05%	15.30%	7.26%	10.10%
Burleigh , ND	16.04%	5.07%	54.78%	12.28%	8.17%	73.26%	2.60%	8.90%	32.18%	7.85%	11.60%	7.02%	6.70%
Butler , KS	14.94%	3.70%	61.73%	8.20%	8.83%	67.84%	5.60%	6.70%	24.19%	8.04%	13.00%	7.48%	9.30%
Callaway , MO	13.32%	6.68%	54.64%	6.62%	8.46%	64.94%	4.90%	8.90%	22.46%	12.74%	17.60%	9.43%	9.20%
Cape Girardeau , MO	17.57%	7.61%	51.80%	7.31%	10.23%	67.35%	5.70%	13.90%	26.32%	14.08%	16.40%	7.94%	9.00%
Carlton , MN	17.85%	7.98%	57.09%	9.46%	10.63%	62.73%	7.10%	11.40%	21.70%	10.73%	10.70%	5.14%	7.50%
Carver , MN	10.27%	5.42%	61.34%	24.28%	7.69%	76.99%	4.10%	5.30%	41.72%	6.57%	9.20%	5.63%	6.00%
Cass , MO	14.27%	6.30%	60.64%	18.01%	10.40%	69.75%	5.00%	7.50%	21.71%	7.76%	15.60%	6.49%	8.70%
Cass , ND	11.83%	6.35%	49.21%	15.48%	7.04%	76.71%	4.40%	13.10%	35.33%	6.04%	14.70%	6.60%	6.40%
Cass , NE	15.47%	1.20%	62.92%	3.79%	5.41%	71.41%	4.60%	5.00%	22.97%	6.60%	15.80%	6.65%	8.20%
Chisago , MN	13.27%	2.97%	60.77%	26.56%	7.44%	67.82%	6.90%	6.90%	16.95%	8.63%	11.50%	5.88%	6.40%
Christian , MO	14.19%	2.56%	64.22%	34.02%	8.34%	70.11%	5.60%	9.90%	27.09%	7.79%	18.60%	5.76%	7.80%
Clay , MN	14.45%	4.67%	50.30%	9.98%	9.70%	71.46%	5.40%	12.90%	32.12%	7.34%	11.10%	7.31%	6.80%
Clay , MO	13.51%	6.00%	54.78%	15.41%	9.22%	72.17%	4.50%	7.00%	29.89%	9.13%	13.80%	6.73%	8.70%

County	Elder	NONCAU	MARRIED	POP_CHG	SINGPH	WKFO	UENMP	POV	BACHED	HSDROP	UNINSU	LBW	Diabetes
Clinton , IL	18.10%	4.91%	54.91%	4.92%	8.72%	63.67%	5.00%	8.40%	18.65%	14.11%	17.40%	5.57%	8.50%
Clinton , MO	18.00%	1.81%	57.84%	9.09%	7.93%	65.22%	6.80%	8.20%	19.28%	8.54%	18.00%	7.16%	9.50%
Cole , MO	14.87%	13.21%	52.55%	4.03%	8.59%	68.64%	5.20%	9.50%	31.72%	11.72%	17.00%	7.44%	8.70%
Dakota , MN	11.08%	10.91%	56.70%	9.64%	8.19%	77.47%	5.50%	5.20%	38.17%	5.78%	10.10%	6.02%	6.50%
Dakota , NE	12.93%	24.83%	55.71%	1.31%	14.63%	74.65%	4.90%	16.00%	12.10%	23.72%	20.80%	6.98%	8.60%
Dallas , IA	10.92%	5.49%	59.68%	46.34%	7.97%	77.26%	4.60%	6.70%	38.49%	7.29%	12.50%	6.66%	6.50%
Douglas , KS	11.48%	11.06%	39.37%	8.18%	6.14%	70.42%	6.60%	21.20%	48.34%	4.34%	20.20%	6.82%	6.20%
Douglas , NE	13.03%	18.97%	46.07%	7.95%	10.24%	72.53%	6.00%	12.80%	34.40%	10.50%	13.30%	7.81%	7.90%
Douglas , WI	17.87%	3.81%	50.52%	0.93%	8.47%	65.02%	5.90%	12.70%	22.37%	9.95%	11.10%	5.93%	8.30%
Dubuque , IA	18.43%	2.57%	56.14%	3.50%	8.11%	71.40%	4.20%	8.80%	24.67%	9.85%	11.40%	5.91%	7.50%
Franklin , KS	15.06%	3.70%	55.97%	3.71%	8.65%	70.99%	5.90%	6.70%	17.04%	8.84%	13.20%	6.86%	8.90%
Franklin , MO	16.31%	2.09%	57.52%	7.08%	7.65%	66.99%	6.60%	10.10%	17.14%	16.20%	15.50%	6.93%	8.60%
Geary , KS	12.10%	24.43%	57.53%	4.56%	11.47%	67.92%	5.50%	12.00%	21.99%	9.26%	18.90%	9.07%	8.70%
Grand Forks , ND	12.35%	6.60%	45.39%	0.91%	6.55%	73.32%	4.20%	18.20%	32.43%	7.40%	16.50%	6.08%	7.00%
Greene , MO	16.67%	5.33%	48.73%	11.71%	9.21%	66.08%	6.30%	16.60%	27.14%	11.24%	18.40%	6.84%	8.40%
Harvey , KS	20.04%	5.22%	59.01%	3.08%	8.15%	67.77%	3.80%	9.80%	25.86%	8.91%	15.00%	6.88%	8.80%
Hennepin , MN	13.48%	19.42%	47.40%	1.17%	8.23%	73.39%	6.60%	11.20%	44.16%	7.93%	10.30%	7.11%	6.10%
Henry , IL	20.66%	4.45%	61.42%	-1.11%	5.42%	66.12%	6.00%	9.90%	21.56%	12.79%	15.80%	6.42%	8.80%
Isanti , MN	13.73%	1.88%	55.55%	20.10%	8.29%	71.22%	8.50%	8.80%	15.76%	9.24%	11.70%	5.67%	6.20%
Jackson , MO	14.93%	27.41%	43.62%	1.30%	10.87%	68.02%	8.80%	15.30%	27.02%	13.10%	17.40%	8.43%	9.20%
Jasper , MO	16.23%	5.62%	50.06%	9.03%	12.70%	64.96%	8.50%	19.00%	18.35%	17.70%	19.00%	6.74%	8.40%
Jefferson , MO	13.41%	2.15%	56.91%	8.42%	9.03%	69.55%	6.90%	9.20%	16.64%	14.13%	14.70%	7.55%	9.20%
Jersey , IL	18.12%	1.60%	55.90%	6.09%	6.94%	64.73%	3.10%	9.80%	16.31%	13.19%	14.50%	6.89%	8.30%
Johnson , IA	10.53%	9.69%	43.19%	12.89%	6.46%	73.40%	4.00%	18.20%	50.97%	4.49%	14.20%	6.31%	5.60%

County	Elder	NONCAU	MARRIED	POP_CHG	SINGPH	WKFO	UENMP	POV	BACHED	HSDROP	UNINSU	LBW	Diabetes
Johnson , KS	12.86%	10.22%	57.49%	16.17%	7.28%	75.25%	4.60%	5.30%	50.57 %	4.55%	10.20%	6.17%	6.50%
Jones , IA	19.31%	3.49%	53.36%	2.80%	8.04%	61.07%	4.10%	8.40%	16.86 %	10.21%	13.30%	6.88%	7.90%
Lafayette , MO	18.84%	2.90%	58.67%	0.94%	10.73%	64.80%	3.10%	11.80%	15.41 %	13.06%	16.40%	6.60%	9.70%
Lancaster , NE	12.83%	7.91%	49.39%	10.45%	7.92%	74.10%	5.10%	13.30%	35.74 %	6.90%	14.90%	6.87%	7.20%
Leavenworth , KS	13.17%	12.87%	54.41%	7.57%	9.05%	62.88%	7.50%	7.30%	28.97 %	8.66%	12.30%	7.47%	9.10%
Lincoln , MO	13.03%	1.93%	53.28%	30.89%	9.22%	69.14%	12.30%	11.30%	11.00 %	16.38%	17.40%	6.44%	8.40%
Lincoln , SD	8.55%	2.20%	51.91%	64.62%	8.01%	80.67%	3.40%	3.70%	32.39 %	5.38%	12.00%	6.12%	5.50%
Linn , IA	14.91%	7.13%	53.25%	7.71%	9.97%	71.86%	4.40%	9.90%	29.94 %	6.52%	11.30%	6.62%	8.00%
Macoupin , IL	20.10%	1.44%	52.01%	-1.69%	10.08%	64.70%	7.60%	12.60%	15.00 %	13.50%	15.30%	8.02%	9.00%
Madison , IL	16.98%	9.96%	52.54%	3.32%	9.32%	64.39%	7.40%	12.50%	22.98 %	10.45%	12.90%	8.20%	9.40%
Meade , SD	15.97%	5.11%	61.74%	2.93%	7.87%	69.63%	3.60%	13.40%	21.78 %	6.65%	15.90%	7.39%	7.30%
Miami , KS	14.61%	2.87%	64.15%	12.30%	9.24%	73.10%	4.90%	7.50%	23.62 %	7.52%	12.90%	7.02%	8.50%
Minnehaha , SD	14.13%	8.23%	49.95%	10.65%	10.31%	75.41%	3.60%	9.20%	28.60 %	9.38%	11.40%	6.84%	7.00%
Monroe , IL	16.02%	1.27%	61.91%	16.47%	6.25%	70.06%	4.30%	4.70%	23.79 %	9.28%	13.60%	7.61%	7.90%
Morton , ND	17.40%	5.18%	59.41%	4.62%	5.27%	72.22%	3.00%	8.00%	21.15 %	12.79%	12.80%	7.14%	7.70%
Newton , MO	16.71%	5.51%	55.60%	9.18%	10.39%	63.02%	7.00%	16.00%	17.75 %	13.69%	17.50%	7.00%	9.70%
Nicollet , MN	14.65%	4.39%	51.71%	7.43%	6.92%	72.62%	4.60%	13.30%	31.42 %	8.31%	10.40%	6.31%	6.70%
Olmsted , MN	14.50%	10.03%	57.50%	12.42%	8.11%	72.97%	3.80%	8.40%	40.69 %	5.33%	9.60%	6.65%	6.40%
Pennington , SD	15.87%	11.53%	52.72%	9.16%	11.34%	70.95%	5.40%	13.60%	26.28 %	7.96%	15.70%	7.33%	7.50%
Pierce , WI	11.95%	1.90%	53.12%	9.92%	6.82%	75.15%	4.10%	11.30%	26.53 %	7.45%	12.80%	6.12%	6.80%
Platte , MO	12.78%	8.64%	55.82%	16.17%	10.20%	71.61%	5.00%	6.60%	36.83 %	5.93%	15.00%	6.69%	8.50%
Polk , IA	13.57%	11.32%	53.35%	10.82%	9.65%	74.30%	5.00%	10.00%	34.03 %	8.89%	11.10%	7.06%	8.10%
Polk , MN	20.08%	4.66%	54.37%	-0.51%	7.66%	66.83%	7.70%	13.30%	20.78 %	12.57%	11.50%	6.27%	8.00%
Polk , MO	20.39%	1.33%	55.29%	13.64%	7.16%	56.85%	10.80%	20.10%	17.31 %	20.32%	19.40%	5.76%	9.60%

County	Elder	NONCAU	MARRIED	POP_CHG	SINGPH	WKFO	UENMP	POV	BACHED	HSDROP	UNINSU	LBW	Diabetes
Pottawattamie , IA	16.87%	4.22%	53.97%	3.96%	10.68%	70.10%	5.30%	12.00%	17.19%	10.78%	13.10%	8.11%	7.60%
Ramsey , MN	15.59%	21.25%	44.23%	-2.01%	9.12%	68.79%	7.70%	14.50%	39.05%	9.80%	11.40%	7.20%	7.70%
Ray , MO	17.17%	2.55%	63.17%	1.47%	7.15%	65.52%	6.00%	8.20%	13.20%	13.09%	15.80%	7.66%	10.10%
Riley , KS	8.69%	11.80%	39.56%	8.14%	5.48%	66.25%	4.00%	26.10%	43.30%	5.41%	25.20%	5.73%	6.40%
Rock Island , IL	18.66%	15.19%	50.06%	-0.96%	9.84%	64.54%	7.50%	11.10%	21.89%	13.03%	15.70%	7.55%	9.00%
Sarpy , NE	10.61%	7.31%	59.24%	22.04%	9.71%	77.93%	4.70%	6.40%	34.33%	5.48%	14.10%	6.88%	6.80%
Saunders , NE	18.89%	0.37%	64.70%	3.09%	6.61%	72.43%	3.20%	7.60%	24.42%	7.16%	16.50%	7.22%	8.30%
Scott , IA	15.40%	10.41%	49.91%	1.47%	9.83%	69.18%	5.00%	11.90%	29.65%	9.26%	11.20%	7.22%	7.70%
Scott , MN	9.10%	9.46%	58.77%	37.68%	7.50%	79.34%	5.60%	4.40%	34.93%	5.60%	9.70%	5.83%	5.50%
Sedgwick , KS	13.87%	18.14%	51.24%	6.30%	11.11%	69.93%	6.90%	13.10%	27.71%	11.53%	17.60%	7.77%	9.30%
Shawnee , KS	16.97%	15.52%	49.58%	2.81%	11.59%	68.05%	6.40%	14.00%	28.40%	10.29%	12.70%	7.67%	9.50%
Sherburne , MN	8.81%	3.38%	59.43%	32.70%	6.67%	75.92%	6.00%	6.60%	23.09%	6.89%	11.50%	5.87%	6.10%
St. Charles , MO	13.59%	6.76%	58.99%	21.69%	6.99%	73.60%	4.90%	4.40%	33.13%	7.53%	11.40%	6.75%	8.10%
St. Clair , IL	14.80%	31.28%	46.40%	3.58%	14.24%	65.84%	8.60%	16.60%	23.49%	12.69%	14.40%	9.35%	9.40%
St. Croix , WI	12.08%	3.27%	61.00%	29.56%	8.21%	76.12%	5.70%	6.10%	31.23%	5.77%	10.50%	5.60%	6.90%
St. Louis , MN	18.92%	4.43%	49.76%	-0.65%	8.43%	62.31%	7.70%	15.50%	25.06%	7.89%	9.10%	6.03%	7.30%
St. Louis , MO	17.24%	25.68%	50.09%	-1.70%	9.83%	67.09%	6.70%	9.10%	38.79%	9.28%	12.80%	8.83%	9.00%
St. Louis City, MO	13.74%	51.44%	27.47%	-8.41%	13.91%	66.04%	12.20%	23.70%	26.40%	19.01%	15.80%	11.73%	11.20%
Stearns , MN	14.46%	4.94%	51.36%	10.31%	6.90%	70.83%	5.40%	12.50%	23.74%	9.71%	12.60%	6.88%	6.40%
Story , IA	12.52%	8.75%	42.07%	8.78%	5.26%	71.67%	4.40%	18.40%	46.45%	4.69%	18.40%	5.43%	5.90%
Sumner , KS	17.66%	3.63%	58.74%	-6.48%	6.87%	67.50%	6.50%	11.90%	18.87%	9.44%	14.90%	7.49%	9.60%
Wabasha , MN	19.50%	0.72%	59.58%	0.48%	6.50%	71.73%	2.90%	8.30%	17.92%	9.46%	12.60%	7.73%	7.20%
Warren , IA	15.76%	1.63%	59.55%	10.72%	7.45%	74.04%	3.80%	7.40%	27.09%	5.85%	12.80%	6.37%	7.30%
Warren , MO	18.18%	4.62%	60.25%	27.56%	7.67%	66.08%	9.50%	11.80%	15.65%	16.98%	17.00%	6.93%	9.00%

County	Elder	NONCAU	MARRIED	POP_CHG	SINGPH	WKFO	UENMP	POV	BACHED	HSDROP	UNINSU	LBW	Diabetes
Washington , IA	20.55%	2.09%	58.55%	4.44%	7.74%	70.61%	3.00%	10.70%	17.42%	11.86%	13.70%	6.36%	7.90%
Washington , MN	11.94%	8.63%	59.85%	14.23%	7.82%	74.07%	5.10%	5.10%	40.33%	3.68%	8.90%	5.94%	6.20%
Webster , MO	15.48%	2.38%	60.13%	14.38%	8.78%	60.28%	6.30%	17.30%	13.53%	19.92%	20.10%	6.27%	8.50%
Woodbury , IA	15.15%	12.96%	50.22%	-2.97%	12.30%	70.24%	5.50%	15.00%	19.50%	14.36%	14.10%	7.28%	9.00%
Wright , MN	11.36%	3.37%	63.68%	32.28%	9.03%	76.82%	6.10%	5.70%	23.84%	6.63%	10.70%	5.57%	5.70%
Wyandotte , KS	12.93%	35.98%	43.54%	-2.03%	13.97%	67.56%	11.90%	20.70%	15.22%	21.04%	19.70%	7.95%	10.90%

APPENDIX B

COUNTY ECONOMIC VARIABLES

County	CONSTR	OFFICE	SERVICE	MGMTPROF	PROD_TRAN	RENTOCC	MOVERS	MEDHMV
Anoka , MN	9.50%	27.70%	13.50%	35.00%	14.10%	17.15%	5.88%	$228,400
Benton , IA	13.10%	22.10%	15.10%	27.80%	20.00%	18.29%	5.55%	$128,700
Benton , MN	9.70%	27.00%	16.70%	27.00%	19.10%	30.24%	11.87%	$167,500
Black Hawk , IA	6.60%	25.30%	19.60%	30.20%	17.50%	31.52%	8.53%	$120,000
Blue Earth , MN	7.00%	26.30%	20.30%	28.60%	16.70%	33.55%	10.87%	$165,500
Boone , MO	7.00%	26.00%	16.50%	42.20%	8.20%	43.99%	10.29%	$151,900
Bremer , IA	8.50%	24.60%	14.80%	36.20%	14.80%	17.98%	6.05%	$135,400
Buchanan , MO	8.60%	24.40%	18.10%	30.20%	18.30%	32.01%	7.90%	$107,700
Burleigh , ND	9.40%	28.30%	16.60%	36.70%	8.50%	29.60%	7.59%	$153,800
Butler , KS	11.40%	22.50%	16.50%	33.70%	15.40%	22.40%	8.54%	$120,800
Callaway , MO	10.30%	26.40%	18.90%	31.20%	11.60%	20.65%	9.73%	$125,000
Cape Girardeau , MO	11.40%	28.70%	17.10%	29.10%	12.90%	32.33%	8.31%	$136,600
Carlton , MN	9.10%	19.20%	21.40%	34.40%	15.70%	20.21%	5.51%	$163,500
Carver , MN	7.90%	25.60%	14.10%	41.30%	10.60%	17.62%	5.34%	$288,100
Cass , MO	13.00%	26.60%	14.70%	32.20%	13.10%	20.97%	9.06%	$155,200
Cass , ND	9.30%	26.60%	14.90%	35.40%	12.90%	46.47%	9.58%	$147,400
Cass , NE	13.40%	24.20%	16.80%	31.20%	13.30%	16.85%	5.01%	$151,400
Chisago , MN	13.10%	22.90%	16.40%	30.20%	16.70%	13.20%	7.94%	$230,400
Christian , MO	9.50%	24.90%	16.00%	36.70%	12.60%	24.79%	10.25%	$150,900
Clay , MN	8.70%	26.70%	20.70%	31.60%	11.70%	29.90%	9.41%	$149,900
Clay , MO	7.70%	27.00%	15.60%	36.40%	13.00%	28.31%	7.20%	$156,300

County	CONSTR	OFFICE	SERVICE	MGMTPROF	PROD_TRAN	RENTOCC	MOVERS	MEDHMV
Clinton , IL	11.10%	25.30%	15.50%	30.00%	17.60%	19.89%	6.83%	$127,700
Clinton , MO	15.00%	24.20%	17.30%	25.60%	16.90%	25.16%	7.56%	$153,000
Cole , MO	7.70%	27.70%	14.00%	41.30%	9.20%	33.94%	9.40%	$135,800
Dakota , MN	7.10%	26.90%	13.80%	41.50%	10.50%	20.95%	5.55%	$246,400
Dakota , NE	9.00%	25.10%	19.10%	17.60%	26.10%	34.63%	5.41%	$98,500
Dallas , IA	7.60%	27.20%	11.60%	43.90%	9.10%	20.67%	10.38%	$185,600
Douglas , KS	6.50%	25.10%	17.90%	41.80%	8.50%	46.28%	11.59%	$179,900
Douglas , NE	7.70%	26.90%	16.50%	37.90%	10.70%	36.79%	5.57%	$139,000
Douglas , WI	9.20%	23.80%	19.40%	30.70%	16.50%	29.46%	7.61%	$134,600
Dubuque , IA	7.70%	24.40%	18.00%	33.50%	15.80%	24.79%	4.03%	$136,100
Franklin , KS	10.50%	24.70%	16.70%	27.30%	20.00%	27.54%	7.77%	$121,500
Franklin , MO	13.40%	23.20%	16.20%	27.60%	19.40%	23.72%	4.42%	$149,900
Geary , KS	6.90%	28.20%	19.00%	31.70%	13.80%	49.60%	14.10%	$116,900
Grand Forks , ND	7.90%	26.60%	22.00%	31.30%	11.10%	48.31%	10.72%	$140,300
Greene , MO	8.40%	29.80%	17.70%	31.20%	12.60%	39.71%	8.99%	$128,900
Harvey , KS	10.10%	21.80%	15.80%	33.60%	18.10%	27.62%	6.75%	$105,600
Hennepin , MN	4.90%	26.10%	14.80%	44.80%	9.30%	34.27%	5.75%	$250,900
Henry , IL	10.40%	24.60%	16.50%	29.10%	18.30%	22.03%	5.63%	$111,900
Isanti , MN	16.50%	22.50%	14.30%	28.30%	17.90%	18.60%	8.76%	$213,100
Jackson , MO	8.70%	27.80%	16.30%	34.30%	12.80%	36.71%	5.18%	$131,500
Jasper , MO	9.70%	24.20%	19.50%	26.70%	19.70%	35.20%	5.67%	$95,600
Jefferson , MO	15.70%	25.70%	15.90%	28.40%	14.30%	15.49%	4.58%	$155,200
Jersey , IL	13.30%	24.60%	17.50%	27.30%	16.60%	22.54%	4.49%	$120,600
Johnson , IA	5.90%	23.80%	17.80%	43.70%	8.40%	40.21%	12.04%	$179,800
Johnson , KS	5.10%	27.10%	12.70%	48.00%	6.90%	28.32%	6.56%	$214,000
Jones , IA	11.80%	21.60%	17.40%	29.70%	18.30%	19.49%	6.61%	$104,200

County	CONSTR	OFFICE	SERVICE	MGMTPROF	PROD_TRAN	RENTOCC	MOVERS	MEDHMV
Lafayette , MO	15.50%	24.50%	15.90%	27.10%	16.60%	25.45%	3.36%	$116,900
Lancaster , NE	7.50%	27.00%	17.00%	37.30%	10.90%	37.93%	7.38%	$146,100
Leavenworth , KS	10.00%	25.80%	18.30%	33.90%	11.60%	31.38%	15.13%	$167,300
Lincoln , MO	16.30%	29.10%	15.70%	22.80%	15.60%	17.35%	6.12%	$153,500
Lincoln , SD	10.30%	26.90%	13.60%	35.40%	13.30%	16.90%	8.79%	$161,300
Linn , IA	7.80%	26.20%	15.30%	37.50%	12.90%	27.49%	4.90%	$138,300
Macoupin , IL	12.40%	23.00%	17.50%	28.20%	18.20%	21.89%	5.41%	$89,700
Madison , IL	8.90%	26.10%	17.40%	33.30%	14.20%	25.17%	4.83%	$123,700
Meade , SD	9.70%	24.30%	21.30%	30.20%	13.00%	30.79%	8.80%	$152,800
Miami , KS	13.40%	25.00%	15.10%	33.10%	12.70%	20.43%	6.43%	$167,800
Minnehaha , SD	8.70%	28.90%	15.40%	32.10%	14.20%	34.43%	5.69%	$144,600
Monroe , IL	13.50%	26.10%	16.20%	33.60%	10.20%	20.67%	5.39%	$203,100
Morton , ND	10.10%	24.30%	17.10%	33.90%	13.40%	23.34%	7.48%	$111,700
Newton , MO	10.60%	23.80%	17.30%	28.70%	18.40%	26.68%	6.79%	$107,400
Nicollet , MN	6.10%	25.60%	16.60%	35.60%	15.20%	25.99%	8.86%	$173,900
Olmsted , MN	6.10%	21.20%	16.00%	48.00%	8.20%	23.10%	5.21%	$176,000
Pennington , SD	12.20%	26.50%	18.80%	32.90%	9.40%	33.97%	8.93%	$155,600
Pierce , WI	10.70%	21.30%	17.30%	31.40%	17.30%	22.72%	10.68%	$208,200
Platte , MO	6.90%	27.40%	14.70%	40.10%	10.90%	31.59%	12.60%	$191,300
Polk , IA	7.20%	28.70%	15.30%	38.40%	10.20%	30.06%	6.13%	$153,600
Polk , MN	8.60%	23.50%	18.80%	30.60%	15.50%	28.00%	9.00%	$113,000
Polk , MO	9.10%	20.10%	19.20%	33.00%	17.50%	27.08%	8.00%	$109,200
Pottawattamie , IA	11.10%	28.30%	16.90%	27.30%	15.40%	30.45%	6.21%	$126,200
Ramsey , MN	5.90%	24.60%	16.00%	42.70%	10.40%	29.54%	7.37%	$178,900
Ray , MO	17.50%	21.20%	16.90%	23.90%	20.40%	32.63%	4.70%	$109,600
Riley , KS	7.40%	22.70%	22.10%	39.50%	7.90%	29.65%	14.52%	$462,600

County	CONSTR	OFFICE	SERVICE	MGMTPROF	PROD_TRAN	RENTOCC	MOVERS	MEDHMV
Rock Island , IL	7.70%	26.00%	18.30%	29.70%	18.00%	23.58%	5.48%	$151,700
Sarpy , NE	8.90%	28.20%	15.60%	39.00%	8.00%	25.69%	9.26%	$223,100
Saunders , NE	13.90%	22.10%	17.00%	30.90%	15.60%	29.24%	4.88%	$155,200
Scott , IA	8.40%	25.60%	16.70%	34.00%	15.00%	24.54%	5.38%	$151,200
Scott , MN	8.30%	26.50%	15.00%	38.90%	11.30%	28.21%	5.87%	$164,800
Sedgwick , KS	10.80%	25.00%	15.20%	33.80%	15.00%	37.12%	4.42%	$112,400
Shawnee , KS	8.60%	27.00%	17.10%	34.90%	12.00%	35.00%	5.98%	$264,900
Sherburne , MN	11.00%	25.50%	13.60%	33.50%	16.10%	39.01%	6.94%	$134,700
St. Charles , MO	8.40%	28.20%	14.60%	39.30%	9.40%	33.01%	5.45%	$137,600
St. Clair , IL	7.80%	26.80%	20.30%	32.90%	11.80%	19.50%	5.55%	$122,200
St. Croix , WI	8.60%	23.90%	14.40%	37.20%	15.00%	21.63%	6.11%	$153,600
St. Louis , MN	10.40%	25.30%	21.00%	33.80%	8.90%	51.29%	5.66%	$126,700
St. Louis , MO	5.60%	27.60%	15.10%	42.00%	9.60%	29.61%	5.65%	$144,800
St. Louis city, MO	6.10%	23.70%	24.20%	34.30%	11.40%	28.11%	8.53%	$114,900
Stearns , MN	8.50%	24.20%	18.30%	30.60%	17.10%	29.97%	8.94%	$128,100
Story , IA	5.50%	23.20%	17.80%	42.40%	9.70%	20.27%	13.17%	$119,200
Sumner , KS	10.40%	24.00%	16.00%	31.10%	17.00%	23.42%	8.16%	$484,200
Wabasha , MN	8.70%	23.30%	17.50%	30.60%	17.20%	24.71%	3.55%	$191,000
Warren , IA	9.90%	27.50%	16.50%	36.30%	9.50%	25.14%	7.16%	$165,200
Warren , MO	14.80%	26.90%	16.10%	25.00%	16.70%	38.39%	7.33%	$135,300
Washington , IA	10.50%	19.50%	18.30%	33.20%	17.10%	22.72%	5.84%	$98,700
Washington , MN	7.30%	26.70%	12.70%	43.20%	9.70%	33.73%	5.88%	$242,900
Webster , MO	17.60%	26.50%	13.60%	23.60%	18.10%	22.24%	8.20%	$121,600
Woodbury , IA	8.00%	28.30%	15.70%	27.90%	19.00%	31.34%	6.70%	$95,000
Wright , MN	10.90%	27.30%	15.00%	32.40%	14.10%	15.79%	6.10%	$227,600